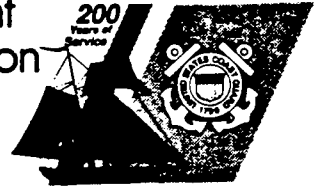


U.S. Department  
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United States  
Coast Guard

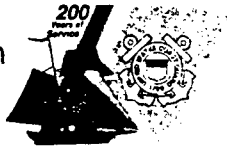


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# **STAFFING STANDARDS MANUAL**

**COMDTINST M5312.11A**





26 SEP 1989

COMMANDANT INSTRUCTION M5312.11A

Subj: Staffing Standards Manual

1. PURPOSE. This manual provides for planning and allocating civilian and military personnel resources for the Coast Guard.
2. DIRECTIVES AFFECTED. COMDTINST M5312.11 and HQINST 5312.1A are canceled.
3. DISCUSSION. The staffing standards provided herein are established for planning purposes. They have been developed from an analysis of the functions and workload of the classes of units involved using historical and engineered data and technical estimates. These standards form the basis for establishing and validating the personnel requirements for the classes of units discussed. They are a management tool used to justify resources for planning proposals and other workforce requests. This manual incorporates several significant changes which are listed below:
  - a. Chapter 1 has been revised and the data revalidated and/or updated.
  - b. Staffing standards are organized by activity and/or facility. Individual rating standards are no longer identified (e.g., Telephone Technician (TTs) will be titled Electronic-Telephone Shops).
  - c. Staffing standards which are out of date have been deleted from the manual. They include:

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	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z
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26 SEP 1980

3.C. (1) District Staff:

- (a) Comptroller Division
- (b) Personnel Division
- (c) Reserve Division
- (d) Boating Safety Division

(2) Yeoman

(3) Medical Facilities

(4) Dental Facilities

(5) Training Centers

(6) Radio/Communications Stations

Current staffing standards have been incorporated.

- 4. REVISION. Staffing Standards should be reviewed regularly to determine their validity especially when new technology or a change in mission affects the staffing of the activity, facility or rating.
- 5. ACTION. Area and district commanders; commanders of maintenance and logistics commands; unit commanding officers; and Commander, CG Activities Europe shall use these standards to develop billet structures for planning proposals. They will be cited as partial justification when requesting changes in billets through the normal planning, programming and budgeting process.

  
M. E. GILBERT  
RESOURCE DIRECTOR/COMPTROLLER



[illegible]

BY  
WHOM ENTERED



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## CHAPTER 1. Policy

### A. Introduction

1. Definition. A Staffing Standard defines the quantitative and qualitative manpower required to accomplish identified workloads for a class of units, unit or subunits. In other words, how many people of what skill levels, series, ratings and paygrades are needed to complete "X" manhours of work?
2. Responsibility. The Executive offices of the President and the Office of Management and Budget (OMB Circulars A-11 and A-11/7) require all Federal agencies to develop a work measurement system.
  - a. Program managers are responsible to initiate and to develop staffing standards studies based on the needs of their program. Changing missions, new technology, revisions to training curriculums, or any number of issues can require a study to reevaluate the unit's staffing. The Staffing Standards are the baseline used in requesting Personnel Allowance Amendments (PAAs), preparing Resource Change Proposals (RCPs) and all other requests to change the personnel structure at a particular unit. A current, approved standard allows the program to request a change based on the standard. If no approved standard exists, each request for a change to personnel resources requires an individual workload analysis that can be validated. Use of a standard more than three years old should be accompanied by a validation of the standard's assumptions and workload measurements.
  - b. The Personnel Allowance and Planning Branch, Programs Division, Office of the Resource Director/Comptroller, Office of the Chief of Staff reviews and validates completed staffing standards. Validated standards are cleared through interested HQ staff offices and approved by the Chief of Staff.
3. Philosophy. The Staffing Standards Manual was developed in response to the executive order and to reflect the Commandant's policy of minimum staffing to perform assigned missions. Staffing standards are primarily concerned with nature of work considerations. Nature of organization considerations such as budget, pyramids, and sea shore ratios are usually considered separately.

### B. Staffing Criteria

1. General Policy. The determination to staff with military or civilian personnel is based on the premise that the Coast Guard is one of the nation's five armed forces and

1.B.1. (Cont'd) the principal Federal Maritime law enforcement agency. Because the Coast Guard transfers to the Navy during war or National Emergency, military/civilian staffing policy is consistent with U.S. Navy Policy expressed in U.S. Navy Total Force Manpower Policies and Procedures, OPNAVINST 1000.16(series), Sections 303.2 and 600.2. Except for afloat or isolated units, a staffing standard study should include a military/civilian staffing determination. All Coast Guard billets at sea are classified military billets to maintain a combat ready status and/or perform law enforcement missions. Military essentiality is the criteria used to determine the need for military billets (Refer to Para.1.B.3.).

2. Contracting Services. OMB Circular A-76 requires all federal agencies to consider the use of the private enterprise system when assessing personnel requirements to provide goods and services. Existing staffing standards are often used as the basis for the organization studies conducted to meet A-76 objectives. A-76 reviews measure workload at a specific unit or activity and result in a most efficient organization (MEO) determination for that activity/unit. Staffing standards measure average workload for like units/activities Coast Guard wide to determine the number of personnel required to perform actual workload. Therefore, an approved MEO for a specific activity/unit becomes the standard for that activity while the staffing standard remains the standard for those like activities without an MEO.

3. Military Staffing.

a. General. Limits on the distribution of commissioned officers (O-4 and above) and E8 and E9 enlisted personnel are prescribed by law. In general, staffing will be at the minimum grade necessary for satisfactory performance of the function.

b. Military Essentiality. The determination that staffing should be military versus civilian is determined by considering the following criteria:

(1) Deployment. Those billets considered rapid response resources that can be moved overnight, e.g. operational units, such as cutters and air stations.

(2) Unusual hours. Those billets where work hours are erratic, excessive, arduous and not compatible with civilian employment, e.g., isolated units, high readiness units.

- 1.B.3.b.(3) Military skills. Those billets where the knowledge and skills required to perform the functions are acquired as a result of military experience, e.g., Honor guard.
- (4) UCMJ. Those billets where it is necessary that the incumbent be subject to the UCMJ, e.g., combat situations and training commands.
- (5) Operations. Those billets that are necessary to operate the services, boats, ships and aircraft, e.g., dictated by military readiness requirements.
- (6) Statutes. Those billets required to be military by law, e.g., judge advocates.
- (7) Command and Control. Those billets considered command or leadership positions where a high degree of military presence is essential to maintain order and discipline, or where the incumbent would be required to exercise direct military authority, beyond normal supervisory authority which would be expected of a civilian.
- (8) Career Progression. Those billets required for structural purposes, e.g., pyramids and sea-shore ratios.

c. Specialty and Paygrade Determinations.

- (1) Commissioned Officers. Commissioned Officers are considered "generalists" and no specialty is assigned to staffing standard determinations. Military rank is determined by the duties and responsibilities of the position.
- (a) Degree of responsibility--dollar value of facilities and equipment, impact of decisions, number of personnel in the command, scope of the mission and/or program area, operational capabilities of the command, dual responsibility billet such as Base XO/Group XO.
- (b) Span of control--number of personnel reporting directly to the officer: generally three to seven.
- (c) Line versus staff--operational or non-operational nature of the personnel in the officer's span of control.

1.B.3.c.(1)(d) Professional skill requirements--what technical or managerial capabilities, special training requirements, and special experience requirements are needed?

(e) Level of subordinate, lateral, and superior commands--what are the grade levels and responsibilities of similar billets?

(f) Career path needs--the officer billet structure should provide for a progression to meet career needs while conforming with the officer billet pyramid.

(g) Status of the billet--where does the billet fit into the existing billet structure? Where should the billet fit? Are there any special liaison requirements? What are the grade levels of functional peers?

(2) Warrant Officers. Warrant Officer specialty determinations are based on the skills defined in Chapter 1-D of the Personnel Manual (COMDTINST M1000.6(series)). No paygrade determinations are made.

(3) Enlisted Personnel. Enlisted personnel rates are determined by the skills required to perform the job as identified in COMDINST M1414.9 (series), Enlisted Qualification Code Manual. Additional factors in determining rates include:

(a) Level of Responsibility

(b) Number and grades of subordinates

(c) Experience level required

#### 4. Civilian Staffing.

a. Consistent with Department of Defense Policy, all positions at shore activities shall be staffed by civilian personnel except those determined to be militarily essential.

b. Grade level is determined by the duties and responsibilities of the position with consideration for span of control, supervisory control and chain of command.

c. Position series is determined by the Office of



1.B.4.c. (Cont'd) Personnel and Training by applying Office of Personnel Management (OPM) Classification Standards and guides.

C. Productive Work Activities.

1. General. The three types of productive work activities at Coast Guard units are duty, watchstanding and day work. Military personnel perform any one or more of these activities depending on the roles or mission of the unit. Civilian personnel generally perform day work except at units where they stand duty, (i.e., fire fighters or security personnel).
2. Duty. Duty is a requirement for personnel to be aboard a unit and available to perform mission requirements and work critical to the unit's operational readiness. A duty day is usually 24 hours during which personnel are expected to stand watches or perform day work as needed.
3. Watchstanding. Watchstanding is the performance of certain operational functions requiring personnel to be at specific places for specified times which are scheduled in advance. Examples include communications, operations center, OOD, security, machinery and tower watches.
  - a. All Coast Guard military personnel may be classified as either watchstanders or nonwatchstanders.
    - (1) Watchstanders are personnel regularly assigned to stand watches during all or part of their work or duty days.
    - (2) Nonwatchstanders are personnel not regularly assigned to stand watches even though they may be on duty, i.e., a small boat coxswain on duty who is aboard the unit and available but is not assigned to stand any specific watches.
  - b. The distinction between watchstanders and nonwatchstanders is important for staffing purposes to determine the availability of personnel for the different types of productive work activities. Individuals standing watches may, depending on the nature of the watch, be simultaneously performing collateral tasks. For example, a radio watchstander may be assigned because of the need to have a live watch guarding a radio frequency at the radio position, but the watchstander is processing messages, updating publications and performing other work while at the position. Messenger watches on the bridge or quarterdeck may be performing housekeeping work when not actively employed in routing message traffic or performing other watch related duties.

1.C.4. Day Work. Day work is the performance of all tasks other than watchstanding, service diversions and unit training during a workday. This term should not be confused with "dayworker", who is a nonwatchstander who does not stand duty.

5. Collateral Duty. Collateral duty is work in addition to one's primary responsibilities assigned by the Commanding Officer. Some collateral duties are ingrained in the primary functions of the unit (e.g., CMS custodian, electronics material, etc.) and are referred to as functional collateral duties. Others, although very important, reside on the periphery (e.g., morale, movie, etc.). Functional collateral duties are measured and included in the staffing calculation; other collateral duties are not.

6. Training. Short term non-resident Class C and on the job training (OJT) are included as productive work activities under this section. This training includes any travel to or from schools. Any leave taken is excluded (counted as non-availability - para. 1-D-4). Unit training is not included here (also counted as non-availability - para. 1-D-4). This training excludes schools that are staffed through Training Allowance billets (TABs).

D. Availability Time.

1. Definition. Availability time is the time available for productive work activities. It is calculated by excluding "overhead" time as described in this section.

2. Application. Twelve standard workweeks are calculated in this section. The most appropriate workweek should be selected for the activity being staffed.

3. Standard Workweeks. A standard workweek is the established time per week individuals are required to be at their unit for duty, watchstanding and day work. All workweek calculations are based on 365.25 days/year, 52.18 weeks/year, and 4.35 weeks/month.

a. Military Ashore. The Coast Guard standard workweeks for military personnel ashore are grouped into three broad categories; these categories average 68, 42 and 40 hours per week. The workweek varies depending on the unit type. These three workweek categories are attempts by the Coast Guard to establish routines which meet the variety of workloads ashore and still provide needed personal time.

(1) The 68 hour workweek averages 1.75 duty days (one in four rotation) with non-duty days spent either as 8 hour workdays, or as two consecutive

- 1.D.3.a.(1) (Cont'd) 24 hour liberty periods. This workweek is the objective for Coast Guard shore units with 24 hour operational readiness requirements such as multi-mission Coast Guard stations and air stations. The watchstanding requirements for these units, i.e., radio and telephone watches, are often stood by designated watchstanders in the duty sections. These watchstanders usually stand eight hours of watch in 4 hour shifts (0400-0800, 0800-1200, 1200-1600 etc.). See figures 1-2 and 1-5.
- (2) There are two 42 hour workweeks at shore facilities. They are the eight hour continuous watch and the 12 hour continuous watch. Continuous watch workweeks are common at units with continuous watchstanding requirements such as radio and communications stations, VTS facilities and operations centers. These workweeks may be used in place of the 68 hour workweek at shore units with 24 hour operational readiness requirements if local circumstances permit sufficient flexibility in scheduling day work.
- (a) The eight hour continuous watch workweek yields an average of 5.25 days of eight hour watches or work shifts per week and totals 2,192 hours per year. The scheduling of eight hour watches or work shifts varies greatly from unit to unit. See figure 1-3.
- (b) The 12 hour continuous watch workweek averages 3.5 days of 12 hour watches and totals 2,192 hours per year. See figure 1-4
- (3) The standard 40 hour workweek consists of five work days a week, eight hours a day. See figure 1-6.
- b. Civilians Ashore. The Coast Guard standard workweeks for civilian personnel are the five day standard workweek and the 72 hour fire fighter workweek which averages 3 duty days/week and totals 3,757 hours per year. See figures 1-11 and 1-12.
- c. Military Afloat. Standard workweeks for military personnel assigned to floating units average 68 hours in port (1 in 4 duty rotation). Workweeks at sea average 81 hours. It is assumed that all leave is taken only during inport periods.

- 1.D.3.c.(1) The 68 hour workweek inport averages 1.75 duty days (1 in 4 rotation), with 3.25 non-duty days spent as eight hour workdays and two days as consecutive 24 hour liberty periods. The total hours per year for the 68 hour workweek inport varies with the unit's inport time. See figures 1-7 and 1-9.
- (2) The 81 hour workweek at sea is based on Navy standards. The workweek provides 8 hours of sleep per day, 2 hours per day for messing and 2 hours per day of personal time, with additional personal time on weekends. Watchstanders average 56 hours of watch per seven day week and 11 hours of day work and/or operational evolutions. Non-watchstanders perform 67 hours of daywork and/or operational evolutions per week. See figure 1-8.
4. Non-Availability Allowances are recognized activities which limit the availability of personnel for duty, watchstanding and day work at their permanent duty stations during the standard workweek.
- a. Leave. Includes regular, emergency, compensatory, sick, and administrative leave. Leave during normally scheduled liberty periods is not counted.
  - b. Holidays. Fixed at ten (10) federal holidays per year. It is assumed that personnel scheduled for duty on holidays are given compensatory time off.
  - c. Service Diversions. Includes but not limited to masts, quarters, inspections, sick call, colors, business at personnel office. These figures are derived from paragraph 509, OPNAVINST 1000.16(series).
  - d. Unit Training. Includes all hands and departmental drills, lectures and training exercises. Unit training does not include on-the-job training (OJT) or short term non-resident class "C" schools (less than 20 weeks in duration). Short term non-resident training and OJT are explicitly covered during work measurement. Class "C" schools greater than 20 weeks in length are staffed through the servicewide training allowance. These figures are derived from paragraph 509, OPNAVINST 1000.16(series).
5. Availability Time Calculations. Availability time is the average amount of time per standard workweek personnel permanently assigned to units are available for duty, watchstanding and day work. Availability times are calculated by subtracting the average amount of time

1.D.5. (Cont'd) personnel are not available for these duties from standard workweeks. Depending on a unit's particular roles and missions, military staffing may be based on one of the three productive work activities whichever requires the highest staffing level in order for the unit to perform its mission. If the availability time of the primary work activity is used to determine staffing, sufficient staffing will be available to perform the work required in the other two work categories. Figure 1-1 summarizes the twelve (12) standard workweeks.

SUMMARY TABLE OF AVAILABILITY TIME  
(see Figures 1-1 to 1-12 for detailed calculations)

		<u>Servicewide Average</u>	
		<u>Hrs/ Week</u>	<u>Hrs/ Year</u>
<b>1. <u>Military Workweeks Ashore</u></b>			
a. Watchstanders			
68 Hour Workweek (1 in 4)	39.24 <sup>1</sup>	2047.5	
8 Hour Continuous Watch	37.71 <sup>1,2</sup>	1967.71	
12 Hour Continuous Watch	37.71 <sup>1,2</sup>	1967.71	
b. Nonwatchstanders			
68 Hour Workweek (1 in 4)	39.24 <sup>1</sup>	2047.5	
5 day Regular Workweek	33.31 <sup>3</sup>	1738.12	
<b>2. <u>Military Workweeks Afloat</u></b>			
a. Watchstanders			
68 Hour Workweek (1 in 4 -Inport)	36.49 <sup>1</sup>	4	
81 Hour Workweek (1 in 3 -Underway)	67.00 <sup>2,3</sup>	4	
b. Nonwatchstanders			
68 Hour Workweek (1 in 4 -Inport)	36.49 <sup>1</sup>	4	
5 day Regular Workweek(Inport)	30.79 <sup>3</sup>	4	
Underway Workweek	67.00 <sup>3</sup>	4	
<b>3. <u>Civilian Availability Time.</u></b>			
5 day Regular Workweek	32.87 <sup>3</sup>	1715.1	
72 Hour Firefighters Workweek	64.43 <sup>1</sup>	3361.96	

Footnotes:

1. Duty Availability
2. Watchstanding Availability
3. Daywork Availability
4. Annual total depends on proportion of time inport

Figure 1-1

Peacetime Military Watchstander 68 Hour Workweek  
Ashore Units (1 in 4 Duty Day Rotation)

Hours/week Duty Status	42.00	Dayworker Status	26.00
-Hrs Leave/Week	-2.76		-2.02
-Holiday Hrs/Week			-1.53
-Training Hrs/Week			-1.47
-Service Diversions Hrs/Week			-1.00

---

Ave. Weekly Availability	39.24	19.98
	Duty Day Hrs/Week	Dayworker Hrs/Week

Duty Day breakdown:	13.08 Hrs/Week Watch(1 in 3 Watch Rotation)
	5.84 Hrs/Week Daywork
	13.08 Hrs/Week Sleep
	3.27 Hrs/Week Messing
	3.97 Hrs/Week Personal Time/Readiness Standby Time

Total Productive Availability:

Watch Hrs/Week:	13.08
Watch Hrs/Year:	682.51
Daywork Hrs/Week:	25.82
Daywork Hrs/Year:	1347.3
Duty Hrs/Week:	39.24
Duty Hrs/Year:	2047.54

Figure 1-2

Peacetime Military 8 Hour Continuous Watch Workweek  
Ashore Units

Hours/week=	42.00
-Hrs Leave/Week=	-2.76
-Holiday Hrs/Week	-1.53
<hr/>	
Ave. Weekly Availability	37.71 Hrs/Week
Average Annual Availablity	1967.71 Hrs/Year
<u>Total Productive Activity:</u>	
Watch Hrs/Week:	37.71
Watch Hrs/Year:	1967.71
Duty Work Hrs/Year:	N/A
Daywork Hrs/Year:	N/A

Figure 1-3

Peacetime Military 12 Hour Continuous Watch Workweek  
Ashore Units

Hours/week=	42.00
-Hrs Leave/Week=	-2.76
-Holiday Hrs/Week	-1.53
<hr/>	
Ave. Weekly Availability	37.71 Hrs/Week
Average Annual Availablity	1967.71 Hrs/Year
<u>Total Productive Activity:</u>	
Watch Hrs/Week:	37.71
Watch Hrs/Year:	1967.71
Duty Work Hrs/Year:	N/A
Daywork Hrs/Year:	N/A

Figure 1-4



Peacetime Military Non-Watchstander 68 Hour Workweek  
Ashore Units (1 in 4 Duty Day Rotation)

Hours/week Duty Status =	42.00	Dayworker Status	26.00
-Hrs Leave/Week =	-2.76		-2.02
-Holiday Hrs/Week			-1.53
-Training Hrs/Week			-1.47
-Service Diversions Hrs/Week			-1.00

---

Ave. Weekly Availability	39.24	19.98
	Duty Day Hrs/Week	Dayworker Hrs/Week

Duty Day breakdown:	11.21 Hrs/Week Daywork
	13.08 Hrs/Week Sleep
	3.27 Hrs/Week Messing
	11.68 Hrs/Week Personal Time/Readiness Standby Time

Total Productive Availability:

Daywork Hrs/Week:	31.19
Daywork Hrs/Year:	1627.50
Duty Hrs/Week:	39.24
Duty Hrs/Year:	2047.54
Watch Hrs/Year:	N/A

Figure 1-5

Peacetime Military 5 Day Regular Workweek  
Ashore Units

Hours/week=	40.00
-Hrs Leave/Week=	-2.69
-Holiday Hrs/Week	-1.53
-Training Hrs/Week	-1.47
-Service Diversions Hrs/Week	-1.00
<hr/>	
Ave. Weekly Availability	33.31 Hrs/Week
Average Annual Availability	1738.12 Hrs/Year
<u>Total Productive Availability:</u>	
Daywork Hrs/Week:	33.31
Daywork Hrs/Year:	1738.12
Watch Hrs/Year:	N/A
Duty Hrs/Year:	N/A

Figure 1-6

Peacetime Military Inport Watchstander 68 Hour Workweek  
Afloat Units (1 in 4 Duty Day Rotation)

Hours/week Duty Status =	42.00	Dayworker Status	26.00
-Hrs Leave/Week =	-5.51		-4.04
-Holiday Hrs/Week			-1.53
-Training Hrs/Week			-1.47
-Service Diversions Hrs/Week			-1.00

---

Ave. Weekly Availability	36.49	17.96
	Duty Day Hrs/Week	Dayworker Hrs/Week

Duty Day breakdown:	12.16 Hrs/Week Watch(1 in 3 Watch Rotation)
	5.43 Hrs/Week Daywork
	12.16 Hrs/Week Sleep
	3.04 Hrs/Week Messing
	3.70 Hrs/Week Personal Time/Readiness Standby Time

Total Productive Availability:

Watch Hrs/Week:	12.16
Daywork Hrs/Week:	23.39
Duty Hrs/Week:	36.49

Figure 1-7

Peacetime Military Underway Workweek  
Afloat Units

Hours/week Onboard	168.00
Hours/week - sleep	-56.00
Hours/week - messing	-14.00
Hours/week - Personal/free time	-17.00
<hr/>	
Work Hours/Week	81.00
-Training	-7.00
-Service Diversion	-7.00
<hr/>	
Availability	67.00
Watchstanders (1 in 3 rotation)-	
Watch Hrs/Week	56.00
Daywork Hrs/Week	11.00
Duty Hrs/Week	N/A
Non-Watchstanders	
Daywork Hrs/Week	67.00
Watch Hrs/Week	N/A
Duty Hrs/Week	N/A

Figure 1-8

Peacetime Military Inport Non Watchstanders 68 Hour Workweek  
Afloat Units (1 in 4 Duty Day Rotation)

Hours/week Duty Status =	42.00	Dayworker Status	26.00
-Hrs Leave/Week =	-5.51		-4.04
-Holiday Hrs/Week			-1.53
-Training Hrs/Week			-1.47
-Service Diversions Hrs/Week			-1.00

---

Ave. Weekly Availability	36.49	17.96
	Duty Day Hrs/Week	Dayworker Hrs/Week

Duty Day breakdown	10.42 Hrs/Week Daywork
	12.16 Hrs/Week Sleep
	3.04 Hrs/Week Messing
	10.87 Hrs/Week Personal Time/Readiness Standby Time

Total Productive Availability:

Daywork Hrs/Week:	28.38
Watch Hrs/Week:	N/A
Duty Hrs/Week:	36.49

Figure 1-9

Peacetime Military Inport 5 Day Workweek  
Afloat Units

Hours/week=	40.00
-Hrs Leave/Week=	-5.21
-Holiday Hrs/Week	-1.53
-Training Hrs/Week	-1.47
-Service Diversions Hrs/Week	-1.00
<hr/>	
Ave. Weekly Availability	30.79 Hrs/Week
<u>Total Productive Availability:</u>	
Daywork Hrs/Week:	30.79
Duty Hrs/Week:	N/A
Watch Hrs/Week:	N/A

Figure 1-10

Peacetime Civilian Workweek -  
5 days/week, 8 hours/day

Hours/week=	40.00
-Hrs Leave/Week=	-5.56
-Holiday Hrs/Week	-1.53
-Training Hrs/Week	-0.04
<hr/>	
Ave. Weekly Availability	32.87 Hrs/Week
Average Annual Availability	1715.1 Hrs/Year

Figure 1-11

Peacetime Civilian Firefighters Work Week  
3 Duty days/week, 24 Hour Duty Day

Hours/week=	72.00
-Hrs Leave/Week=	-5.56
-Holiday Hrs/Week	-1.97
-Training Hrs/Week	-0.04
<hr/>	
Ave. Weekly Duty Standing Availability	64.43 Hrs/Week
Daywork Availability (0800-1630)=	21.48 Hrs/Week
Onboard Duty status, afterhours =	42.95 Hrs/Week
Average Annual Duty Standing Availability	3361.96 Hrs/Year
Daywork Availability (0800-1630)=	1120.83
Onboard Duty status, afterhours =	2241.13

NOTES

1. Afloat Availability is based on Coast Guard wide average of 26.09 weeks at sea for cutters.
2. Standard Watch rotation is 1 in 4 duty days and watches scheduled as 4 hours of watch followed by 8 hours of non-watch.
3. Inport Daywork is performed 5 days per week plus Saturday for duty standers.
4. The Non-availability allowances should be recalculated annually.
5. Non-availability due to medical, discipline, etc., reasons are staffed through the servicewide support billets.
6. Annual availabilities for afloat workweeks dependent on average number of weeks spent inport. Variances greater than 3 weeks from standard in note 1 requires recalculation of standard availability (see G-CPA-2).
7. OMB Circular A-11 requires actual leave taken be used vice leave earned.

## 1.E. Staffing Standards Development

1. General. Personnel requirements for an activity are determined by calculating the work content in the categories of duty, watchstanding and/or daywork and dividing by the applicable availability times of personnel in each category.

$$\frac{\text{WORK CONTENT}}{\text{AVAILABILITY TIME}} = \text{BILLET/POSITIONS REQUIRED}$$

Work content is expressed as time and refers to the time required for the qualified worker to accomplish the specified task required by management or the command. Work content is established through the application of various work measurement techniques. In many instances, it is necessary to calculate each work content category separately and to base unit staffing upon the work category which requires the greatest staffing level. An alternative method of justifying personnel for existing activities is to base staffing upon past performances under average conditions (Government Accounting Office, FPCD--78-21, 6 March 1978). This includes the use of historical or engineered data, management information and work reporting systems.

### 2. Procedures for Developing a Staffing Standard.

- a. Responsibility. Staffing Standards Studies can only be conducted for units that are in existence. G-CPA-2 oversees the process of staffing standards development but it is the responsibility of program and facility managers to initiate, fund and manage the staffing standards study.
- b. Initiation of the Study. The Programs Division (G-CPA) should be notified, in writing, of the intention to develop a staffing standard. The notification should include the following information (at a minimum):
  - (1) Study Objective. Identify the type of unit or activity to be studied (e.g., TT shop, PERSRU).
  - (2) Statement of work. Will be conducted in-house (by Coast Guard employees) or contracted to a private firm? A formal statement of work should be included for contracted studies.
  - (3) Project officer.
- c. Conducting the Study.
  - (1) Determine Scope of Study. Identify affected



1.E.2.c.(1) (Cont'd) units/personnel and determine the scope and size of the study.

(2) Develop a Data Plan.

(a) Identify work. Information on specific work centers/tasks can be studied by function, activity or services provided. For example, Yeoman can be measured at PERSRUs and at the other units performing general administrative work. Tasks must be grouped into work categories such as direct, indirect, travel and training (other than unit training).

(b) Determine the work measurement technique. Work measurement is the use of recognized techniques to measure the amount of time required for tasks involving some human activity. The following summarizes, in decreasing order of desirability the work measurement techniques used in developing Coast Guard staffing standards:

1. Time Study. The time study method is based on analysis of the actual time expended on a work operation or elements of an operation. A worker is observed, his performance timed, and the times recorded.
2. Work Sampling. Work sampling uses statistically sound sampling design to measure work activity using random observations.
3. Historical Standards (statistical records). This technique requires analysis of manhour and work unit data available or collected in sufficient quantity to assure data consistency, accuracy and reliability. Data is frequently collected from records, reports, logs and manuals.
4. Subject Matter Expert Estimates An estimate is made by breaking a task into elements and then having people technically trained in this particular work, estimate how long it "should" take for each of the elements to be completed. Data can also be collected through interviews and questionnaires.

1.E.2.c.(2)(a)5. Staffing Pattern Ratios. This technique uses historical records to compare ratios of employees (e.g., the ratio of support personnel to personnel supported). This technique can be combined with other methods of measurement, (e.g., the standard of one legal clerk to each lawyer, may have been derived from a technical estimate plus staffing pattern ratios).

(c) Prepare Data Plan. A data plan should be submitted to G-CPA-2 for approval prior to beginning data collection. The data plan should be a deliverable in contracted studies. Key elements of data plans include the following:

1. Data collection method(s)
  - Work to be studied
  - Work measurement technique
2. How expected biases, such as resistance to change, unpopularity of shift work, bad data, sampling collection, and other factors will be countered.
3. How the correct quantitative measures of costs and benefits will be selected so the data can be collected and recorded consistently and will be persuasive in the analysis of alternative staffing standards;
4. Experiment design to assure control of critical confounding factors while maintaining statistical independence and adequate power to evaluate interaction terms at the appropriate levels;
5. Method of statistical analysis;
6. Schedule of data collection visits for maximum efficiency while accounting adequately for variables, if appropriate.

(3) Data collection. Conduct data collection as determined in the data plan.

(4) Analyze Data. Collected data is analyzed and presented in appropriate form for submission for validation.

1.E.2.c.(5) Validate Data. Analyzed data is validated for statistical accuracy and adherence to appropriate guidelines and procedures of work measurement.

d. Develop the Staffing Standard. Using the workload data collected, divide by the appropriate availability time (para. 1-D) to determine the number of billets/positions required. Submit the staffing calculations to G-CPA-2 for review. A comparison to current staffing should be included, if applicable. Fractional billets/positions are calculated as follows:

(1) Fractions of personnel of 0.5 and above are rounded up.

(2) Fractions less than 0.5 may warrant an extra billet/position. The following formula ensures daily work overload is less than 30 minutes per day per billet/position:

RP = Billets required by workload/availability  
(rounded to nearest whole number)

RO = Maximum Overload factor

DD = Average number of days worked per week

HH = Available productive hours per week

RO =  $\frac{RP \times .5 \times DD + (RP \times HH)}{HH}$

If RO is less than RP then  
billets/positions = RP + 1

Example: A unit staffing calculation computes to 5.45 required personnel (RP) for a shore station using a nonwatchstander's five day regular workweek.

$$\frac{5 \times 0.5 \times 5 + (5 \times 33.31)}{33.31} = 5.38$$

Since the overload factor of 5.38 is less than the calculated staffing of 5.45, an extra billet (5 + 1) is required. The total unit personnel authorization for this shore station is six.

e. Draft Chapter for Staffing Standards Manual. The required format for a staffing standard chapter is provided below:

(1) Description. Describe the unit to be staffed. Include unique work centers, missions which may complicate the standard or require variables in the calculation, and the date of data collection.

- 1.E.2.e.(2) Glossary. Include terms that are not common knowledge to field personnel or have multiple definitions.
- (3) Standards Development. Describe the method(s) used to develop the standard; include constraints or special considerations made during the study development.
- (4) Staffing Calculation. Describe the workweek and calculations used to develop the standard.
- (5) Example. Include a step-by-step example calculation of the standard.

Note: The published Staffing Standard should be concise and contain only information needed to compute the staffing standard. Detailed data plan and other statistical information should be forwarded with the background package submitted to G-CPA-2 for validation and historical filing for audit purposes.

- f. Format Review. COMDTINST M5215.6(series), The Coast Guard Directives System Manual provides additional guidance. G-TIS should review the standard for conformance to directive procedures before submission to G-CPA-2.
- g. Formal Review and Clearance. Submit the draft chapter to G-CPA-2. Background data should be an enclosure to the draft standard. Data calculations, sample plan and any other data necessary for an audit should be included. This information will be retained in G-CPA-2 files, if the standard is approved. The draft chapter will be distributed to interested Headquarters offices for concurrent clearance. The draft standard will be returned with approval, disapproval, or instructions for change. If approved, it should be resubmitted to G-CPA-2 in final form.
- h. Final Approval. The standard will be presented to Chief of Staff for approval. G-CPA-2 will notify the Program/Force Manager that the standard is approved and will be published in the next change to the Staffing Standards Manual. G-CPA-2 will file the standard and background data as the historical file available if the standard is audited by OST or GAO.

#### F. Mobilization Staffing Policy

1. Introduction. The policies in this section are reflective of the Coast Guard's relationship to the Navy in times of war or national emergency. As such,

1.F.1. (Cont'd) these policies are consistent with the staffing policies of the Navy stated in U. S. Navy Total Force Manpower Policies and Programs (OPNAVINST 1000.16(series)) Navy Manpower and Mobilization System (NAMMOS) User's Manual (OPNAV P11-1 and Wartime Manpower Planning Policies and Procedures (DODINST 1100.19(series)). In general, a staffing standard study cannot be conducted for mobilization because the work cannot be measured. This section addresses adjustments that would be needed in the workweek availability, position coverage and productivity factors during mobilization.

2. General Policies.

- a. Mobilization workweeks are established to provide increased capabilities with assigned military and civilian manpower resources. These workweeks are planning factors and may be adjusted as required to meet the command mobilization mission.
- b. During mobilization, no allowances are made for leave or holidays.

3. Mobilization Workweeks.

- a. Underway workweeks for afloat units remain unchanged.
- b. The continuous watch workweeks remain unchanged except no allowances are made for leave or holidays.
- c. All 68 hour duty standing workweeks remain unchanged except that no allowances are made for leave or holidays.
- d. The firefighter workweek remains unchanged except that no allowances are made for leave or holidays.
- e. The 5 day workweeks are modified as followed:
  - (1) During Phase I of Mobilization (M-day through M+2 months), the standard 5 days/week, 8 hours/day, 40 hour workweek becomes a 6 days/week, 10 hours/day, 60 hour workweek
  - (2) During Phase II of Mobilization (M+2 months and beyond) the standard 5 days/week, 8 hours/day, 40 hour workweek becomes a 6 days/week, 8 hours/day, 48 hour workweek.
  - (3) No allowances are made for leave or holidays.
- f. Figure 1-13 summarizes the mobilization availability hours.

SUMMARY TABLE OF MOBILIZATION AVAILABILITY TIME

		<u>Servicewide Average</u>	
		Phase I	Phase II
		<u>Hrs/</u> <u>Week</u>	<u>Hrs/</u> <u>Week</u>
 1. <u>Military Workweeks Ashore</u>			
a. Watchstanders			
68 Hour Workweek (1 in 4)	42.00 <sup>1</sup>	42.00	
8 Hour Continuous Watch	42.00 <sup>1,2</sup>	42.00	
12 Hour Continuous Watch	42.00 <sup>1,2</sup>	42.00	
b. Nonwatchstanders			
68 Hour Workweek (1 in 4)	42.00 <sup>1</sup>	42.00	
5 day Regular Workweek	57.53 <sup>3</sup>	45.53	
 2. <u>Military Workweeks Afloat</u>			
a. Watchstanders			
68 Hour Workweek (1 in 4 -Inport)	42.00 <sup>1</sup>	42.00	
81 Hour Workweek (1 in 3 -Underway)	56.00 <sup>2</sup>	81.00	
b. Nonwatchstanders			
68 Hour Workweek (1 in 4 -Inport)	42.00 <sup>1</sup>	42.00	
5 day Regular Workweek(Inport)	57.53 <sup>3</sup>	45.53	
5.5 day Underway Workweek	30.00 <sup>3</sup>	30.00	
 3. <u>Civilian Availability Time.</u>			
5 day Regular Workweek	60.00 <sup>3</sup>	48.00	
72 Hour Firefighters Workweek	72.00 <sup>1</sup>	72.00	

Footnotes:

1. Duty Availability
2. Watchstanding Availability
3. Daywork Availability

Figure 1-13

1.F.4. Position Coverage Requirements. Position Manpower Coverage Factors (PMCFs) are used to convert peacetime billet strength to mobilization strength. They are only used for converting 40 hour workweek billets/positions. The PMCFs are based on the increased availability hours for Phase I (60 hours) and Phase II (48 hours) mobilization. For coverage greater than 8 hours per day and 5 days a week, the PMCFs assume that the 60 hour and 48 hour workweeks will be used. The PMCFs convert one peacetime 40 hour workweek billet to the appropriate number of mobilization workweek billets for various levels of position coverage. Figures 1-14 and 1-15 summarize the PMCFs.

Military Position Coverage Factors

Coverage Required		Phase I	Phase II
<u>Days/Week</u>	<u>Hours/Day</u>	<u>Billets</u>	<u>Billets</u>
7	24	2.432	3.073
7	16	1.621	2.048
7	12	1.216	1.536
7	8	.811	1.024
6	24	2.084	2.634
6	16	1.390	1.756
6	12	1.042	1.316
6	8	.695	.878
5	24	1.737	2.145
5	16	1.158	1.463
5	12	.869	1.097
5	8	.579	.732

Figure 1-14

### Civilian Position Coverage Factors

Coverage Required		Phase I	Phase II
<u>Days/Week</u>	<u>Hours/Day</u>	<u>Billets</u>	<u>Billets</u>
7	24	2.301	2.876
7	16	1.534	1.917
7	12	1.150	1.438
7	8	.767	.959
6	24	1.972	2.465
6	16	1.315	1.644
6	12	.986	1.233
6	8	.657	.822
5	24	1.644	2.054
5	16	1.096	1.370
5	12	.822	1.027
5	8	.548	.685

Figure 1-15

Example:

(a) Engineering Maintenance for a Group provides 3 MK billets during peacetime for a 40 hour work week.

(b) During Phase I mobilization, the desired coverage is 7 days per week, 24 hours per day.

(c) Phase I billets = 3 peacetime billets x 2.432 PMCF = 7.3 billets

-- or 7 billets (fractional round off per section 1-D).

(d) Conclusion: In order to staff the 3 Group MK billets during Phase I mobilization covering 7 days per week, 24 hours/day, billets must be increased to 7 MKs.

5. Support Billet Productivity Factors. A number of the support billets are not linked to manhours of work but to the numbers of personnel or equipment supported. For example, the number of Subsistence Specialists required at a Coast Guard unit is determined by the number of personnel authorized to subsist. When we go to mobilization workweeks, the productivity goes up because the Specialists will be working more days and hours. Based on historical studies the following Workweek Productivity Adjustment Factors have been adopted for mobilization.

	Workweek	Productivity factor
Phase I M to M+3	60 hours	1.415
Phase II M+3 and beyond	48 hours	1.166



1.F.5. (Cont'd) The productivity adjustment factor indicates that, when the length of the workweek is increased to 60 hours (or a 50% increase) on M-day, total weekly productivity will increase 41.5%. Therefore, the number of personnel authorized to subsist would have to increase by greater than 41.5% before the first mobilization augmentee is required at an activity. This factor has been adopted for use in NAMMOS without regard to function (i.e., the productivity adjustment factor adopted for Subsistence Specialists support would also apply to medical support which is based on the number of outpatient visits per year).

Example:

- (a) Personnel authorized to subsist at the unit in peacetime = 25.
- (b) SS peacetime allowance = 2 for 20 - 30 billets assigned.
- (c) Maximum number of personnel authorized to subsist =  $30 \times 1.415 = 43.5 = 44$  for the same two SS during Phase I mobilization.

G. Glossary.

Activity. A unit, class of units, organization or installation of distinct identity performing a specific function or mission, e.g., station, yard, air station, ship, class of cutters.

Availability Time. The average amount of time per standard workweek that personnel at their permanent duty stations are available for duty, watchstanding and day work. It is calculated by subtracting all applicable non-availability allowances from the standard workweek.

Billet. A military personnel requirement authorized by G-CPA and issued on a personnel allowance amendment.

Collateral Duty. Duty to which an individual is assigned by the commanding officer and which is in addition to the primary duty.

Force Manager. The individual within a program manager's organization responsible for oversight of one or more enlisted rating(s). This oversight includes structural concerns for the rating size and grade distribution, location of billets, the setting of performance standards, development of job and advancement qualifications and specifications for formal and on-the-job training.

Mobilization. The process by which the Armed Forces are brought to a state of increased readiness for war or other national emergencies. This includes assembling and organizing personnel, supplies and material for active military service.

G. (Cont'd)

Most Efficient Organization (MEO). The organizational structure, manpower requirement and procedures identified as a result of the application of the A-76 review process.

Non-Availability Allowance. Activities which limit availability of personnel to be at their duty station during the standard work week.

Position. A civilian personnel requirement authorized by G-CPA and issued on a personnel allowance amendment.

Program Manager. Manager of a Coast Guard program, and the resources assigned to perform the missions associated with that program.

Pyramid. Proportion of each paygrade to the total.

- a. Officer Pyramid: Limits are specified by the Commandant for 0-1 through 0-3, by 14 USC for 0-4 through 0-8. The number of flag officers is specified by Congress.
- b. Enlisted Pyramid: An ideal percent for each paygrade as a percentage of E4-E9. Defined by the Chief of Staff (G-CCS) to provide desirable promotion flows in realistic reenlistment environments and to conform as closely as possible with the structure specified by Staffing Standards.

Service Diversions. Service diversions are actions required of personnel by regulations or standard routine which must be accomplished during working hours and which detract from an individual's availability to do productive work. Service diversions include sick call, quarters, inspections, business at ship's office and disbursing office, pay call, haircuts and other miscellaneous requirements.

Staffing Standards. Define the quantitative and qualitative manpower required to accomplish identified workloads. Staffing standards are developed using accepted work measurement and data collection techniques.

Standard Workweek. The total established time for duty, watchstanding, and day work. The time during a week when an individual is normally expected to be present at the place of work.

Work Center. A grouping of personnel using similar machines, processes, methods and operations and performing homogenous type work, usually located in a centralized area. The term is used to identify a relatively small activity with a broader functional segment. Personnel within a work center perform work that basically contributes to the same end product or result and their duties are similar or closely related.

G. (Cont'd)

Workload. The amount of work in terms of work units which organizations or individuals perform.

Work Measurement. A technique employed for the collection of data on manhours and production by work units, so that the relationship between work performed and manhours expended can be calculated and used as the basis for manpower planning, scheduling, production, budget justification, performance evaluations and cost control.



## CHAPTER 2 -- Staffing Standards for Operational Activities

1. Introduction. This chapter contains staffing standards for Operational Activities.
2. Definition. Operational activities are those with the primary objective of providing services directly to the public in support of Coast Guard mission. These are primarily staffed with operational personnel.

## 2.B. Aids to Navigation Teams

1. Introduction. Aids to Navigation Teams (ANTs) were established as a means of reducing cost of aids to navigation maintenance and to provide rapid response for aids to navigation discrepancies.
2. Unit Description.
  - a. ANTs are small shore units staffed by personnel specially trained to operate aids to navigation boats and vehicles in the protected and semi-exposed marine environment for the servicing of short-range minor aids to navigation.
  - b. ANTs are normally tenant units and under the administrative and operational control of a group commander or buoy tender commanding officer.
3. Responsibilities. Aids to Navigation Teams are responsible for the performance of scheduled maintenance to all assigned major and minor aids, boats and vehicles. They are also responsible for correcting any reported or discovered discrepancies to any other aids within their operational area within the limits of their capability until units having primary responsibility for the aids can respond.
4. Standards Development. The staffing standards were developed using reported workloads and engineering techniques. Staffing constraints, rating qualifications, and work measurement were analyzed.
  - a. The staffing constraints considered were foul weather, minimum unit size, buoy positioning, equipment maintenance, level of facility maintenance performed, boat maintenance, and vehicle mileage.
    - (1) Foul Weather. The Officer-In-Charge is given ample leeway in scheduling work to allow for foul weather. If there exists a significant number of bad weather days such that the total workload is affected, it should be documented and presented as evidence with a request for additional full year or seasonal billets.
    - (2) Minimum Unit Size. The minimum allowance for an ANT will be the crew size of the largest boat plus one billet to allow for leave and TAD.

2.B.4.a.(3) Buoy Positioning. An enlisted XPO or OINC E-6 and above is required to review all Aid Positioning Reports before submittal. Any petty officer who has successfully completed the NATON Aids Positioning course and is a qualified Petty Officer in Charge Aids to Navigation Boat, may position aids to navigation.

(4) The equipment maintenance times listed in Figure 2-1 cover most of the different types of equipment presently in use. If the equipment at a particular unit differs significantly, documented actual staff hours expended maintaining that equipment may be used in the calculation. The documentation must be submitted with any allowance request. Persons assigned to service major aids require a variety of skills. The Enlisted Qualifications Manual (COMDTINST M1414.8(series)) identifies and lists the requirements for each rate and rating. Also qualification codes must be assigned to all billets to identify the requirements for special skills and knowledge which cannot be identified adequately by rate or rating alone.

(5) Boat Maintenance. A Machinery Technician is required at each ANT. A first Class Machinery Technician is required at any unit assigned an ANB.

b. Each billet at the ANT requires certain skills and should be identified by a qualification code as found in COMDTINST M1414.8(series). Qualification codes identify the requirements for special skills and knowledge which cannot be identified adequately by rate or rating alone.

## 5. Staffing Calculation.

a. Step one: Select a standard workweek. Use the formulas and figures in Chapter 1 to determine the work hours delivered per billet per year.

b. Step two: Collect all of the workload information. Figures 2-2 and 2-3 are sample data sheets for this step. Use Figure 2-4 to determine boat crew allowances.

ANNUAL WORK HOURS FOR MAJOR AID MAINTENANCE BY RATING				
System/Equipment	EM	EM or ET	ET	MK
Main Light		3.75		
Emergency Light		1.90		
Main Sound Signal		4.50		
Emergency Sound Signal		1.90		
Radio Beacon (Modern)			24.00	
Radio Beacon (Tube Type)			96.00	
Audiovisual controller & Navaid Sensor		12.00		
Monitor Control Remote Unit		6.00		
Monitor Link - Aid Transceiver			5.00	
Fog Detector			18.00	
12V Battery Charger		5.00		
12V Battery System		4.50		
Fire Suppression System (Signal)		3.00		
E/G System (Prime)				25.50
E/G System (Standby)				7.00
Power System Controller		12.00		
Environmental Controller	6.00			
Fuel Day Tank Assembly		6.00		
24V Battery Charger		5.00		
24V Battery System		4.50		
Fire Suppression System (Power)		3.00		
Main Fuel System				3.00
Commercial Power System		6.00		
Monitor Control System (At Aid, Lv)		12.00		
Monitor Link - Master Transceiver			18.00	

Figure 2-1



AIDS TO NAVIGATION TEAMS  
DATA COLLECTION WORKSHEET

	PRIMARY RESPONSIBILITY		SECONDARY RESPONSIBILITY	
AID TYPE	WORK VEHICLE	QUANTITY	WORK VEHICLE	QUANTITY
<b>LIGHTED BUOYS</b>				
1. SEASONAL	_____	_____	_____	_____
2. YEAR ROUND	_____	_____	_____	_____
<b>UNLIGHTED BUOYS</b>				
1. SEASONAL	_____	_____	_____	_____
2. YEAR ROUND	_____	_____	_____	_____
<b>LIGHTS, MINOR</b>				
1. BY BOAT	_____	_____	_____	_____
2. BY TRUCK	_____	_____	_____	_____
<b>DAY BEACONS</b>				
1. BY BOAT	_____	_____	_____	_____
2. BY TRUCK	_____	_____	_____	_____
<b>PRIVATE AIDS</b>				
1. BY BOAT	_____	_____	_____	_____
2. BY TRUCK	_____	_____	_____	_____
BOATS AND VEHICLES	TOTAL RESOURCE HOURS		QUANTITY	
1. TANB	_____		_____	
2. BU	_____		_____	
3. BUSL	_____		_____	
4. ANB	_____		_____	
5. SKB/SKL	_____		_____	
	MILEAGE			
6. TRUCK	_____		_____	

Figure 2-2

# FACILITY MAINTENANCE CALCULATIONS FOR THE UNIT'S WORK STATION

A. METHOD 1 -- This method is used when the ANT is physically located in another unit's building. Provide square footage for all applicable areas. (Include only area maintained by ANT)

AREA AFFECTED	SQFT	GSA FACTOR
Workshop Space Cleaning (Interior floor, walls, and ceiling)	_____	x 69.8 = _____
Daily Room Cleaning (Interior floor area)	_____	x 83.2 = _____
Complete Room Cleaning (Interior floor, walls, and ceiling)	_____	x 38.4 = _____
Strip and Refinish floor (Interior floor space affected)	_____	x 5.3 = _____
Paper and Trash collection (Interior floor space)	_____	x 3.9 = _____
High Area Cleaning (Interior walls and ceiling)	_____	x 4.0 = _____
Storage Areas (Interior floor, walls, and ceiling)	_____	x 3.8 = _____
Sweep Corridors (Interior floor space affected)	_____	x 14.9 = _____
Vacuum Carpets (Carpeting affected)	_____	x 9.6 = _____
Outside Policing (Grounds affected)	_____	x 1.4 = _____
Outside Manual Sweeping (Grounds, sidewalk area affected)	_____	x 1.9 = _____
Outside Grounds Care (Grounds area affected)	_____	x 1.0 = _____
		FACTOR = _____
		x .001
(Manhours of maintenance/thousand sqft)		TOTAL = _____

Figure 2-3

B. METHOD 2 -- This method is used when the ANT is separated from the unit and maintains its own building. Provide square footage for all applicable areas.

AREA AFFECTED	SQFT	GSA FACTOR
Workshop Space Cleaning (Interior floor, walls, and ceiling)	_____	x 69.8 = _____
Daily Room Cleaning (Interior floor area)	_____	x 83.2 = _____
Complete Room Cleaning (Interior floor, walls, and ceiling)	_____	x 38.4 = _____
Strip and Refinish floor (Interior floor space affected)	_____	x 5.3 = _____
Paper and Trash collection (Interior floor space)	_____	x 3.9 = _____
High Area Cleaning (Interior walls and ceiling)	_____	x 4.0 = _____
Storage Areas (Interior floor, walls, and ceiling)	_____	x 3.8 = _____
Sweep Corridors (Interior floor space affected)	_____	x 14.9 = _____
Vacuum Carpets (Carpeting affected)	_____	x 62.4 = _____
Utility Work (Interior building space)	_____	x 2.5 = _____
Police Garage (Interior garage space)	_____	x 4.2 = _____
Outside Policing (Grounds area affected)	_____	x 8.3 = _____
Outside Manual Sweeping (Grounds, sidewalk area affected)	_____	x 8.3 = _____
Outside Grounds Care (Grounds area affected)	_____	x 4.2 = _____
		FACTOR = _____
		x .001
(Manhours of maintenance/thousand sqft)		TOTAL = _____

Figure 2-3 (Cont'd)

# BOAT CREW ALLOWANCES

Class	Crew Size	Distribution
ANB	4	1 BM1/BM2, 1 MK2/MK3, 2 SN/FN
BU	4	1 BM1/BM2, 1 MK2/MK3, 2 SN/FN
BUSL	4	1 BM1/BM2, 1 MK2/MK3, 2 SN/FN
21' TANB	3	1 BM2/BM3, 1 MK2/MK3, 1 SN/FN
19' TICWAN	3	1 BM2/BM3, 1 MK2/MK3, 1 SN/FN
SKB	2	1 BM3/SN, 1 MK3/FN
SKL	2	1 BM3/SN, 1 MK3/FN
SKM	2	1 BM3/SN, 1 MK3/FN
TRUCK	2 (3 if towing TANB)	

Figure 2-4

2.B.5.c. Step three: Using Figure 2-5, apply the following formula in to the workload data to determine the number of billets required:

$$\frac{[(\text{Summation of } WC_n \times ST_n \times BCA_n) + \text{MAINT} + \text{ADMIN} + \text{TVB} + \text{TVV} + \text{MISC}]}{(\text{PROD HRS/YR})}$$

Exhibit 2-1 contains the definitions for each variable. If the total is less than 7, use the fractional staffing calculation equation found in Chapter 1. If the total is over 7, round up fractional remainders of .5 or more, otherwise round down.

- d. Step four: Apply the results of step three to Figure 2-6 to determine the appropriate rates and ratings for the ANT.
- e. Step five: Assign each billet appropriate qualification codes to obtain the complete ANT profile.
- f. Example: Exhibit 2-2 is a complete step-by-step example.

AIDS TO NAVIGATION TEAMS  
WORKSHEET

TOTAL HOURS OF AIDS WORKED	BY BOAT	BY LAND
$\frac{WC_1}{ST_1} \times \frac{0.77}{ST_1} \times \frac{BCA_1}{BCA_1} =$	_____	_____
$\frac{WC_2}{ST_2} \times \frac{0.35}{ST_2} \times \frac{BCA_2}{BCA_2} =$	_____	_____
$\frac{WC_3}{ST_3} \times \frac{0.51}{ST_3} \times \frac{BCA_3}{BCA_3} =$	_____	_____
$\frac{WC_4}{ST_4} \times \frac{0.42}{ST_4} \times \frac{BCA_4}{BCA_4} =$	_____	_____
$\frac{WC_5}{ST_5} \times \frac{0.80}{ST_5} \times \frac{BCA_5}{BCA_5} =$	_____	_____
$\frac{WC_6}{ST_6} \times \frac{1.00}{ST_6} \times \frac{BCA_6}{BCA_6} =$	_____	_____
$\frac{WC_7}{ST_7} \times \frac{0.70}{ST_7} \times \frac{BCA_7}{BCA_7} =$	_____	_____
$\frac{WC_8}{ST_8} \times \frac{0.32}{ST_8} \times \frac{BCA_8}{BCA_8} =$	_____	_____
$\frac{WC_9}{ST_9} \times \frac{0.40}{ST_9} \times \frac{BCA_9}{BCA_9} =$	_____	_____
$\frac{WC_{10}}{ST_{10}} \times \frac{0.35}{ST_{10}} \times \frac{BCA_{10}}{BCA_{10}} =$	_____	_____
$\frac{WC_{11}}{ST_{11}} \times \frac{0.80}{ST_{11}} \times \frac{BCA_{11}}{BCA_{11}} =$	_____	_____
$\frac{WC_{12}}{ST_{12}} \times \frac{0.70}{ST_{12}} \times \frac{BCA_{12}}{BCA_{12}} =$	_____	_____
<div style="display: flex; justify-content: space-between;"> <div>SUBTOTAL AIDS WORKED BY BOAT</div> <div>_____</div> </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div>SUBTOTAL AIDS WORKED BY LAND</div> <div>_____</div> </div>		

Figure 2-5

MAINTENANCE:

<u>        </u>	x	<u>664</u>	=	<u>        </u>
NR <sub>TANB</sub>		ST <sub>TANB</sub>		
<u>        </u>	x	<u>1592</u>	=	<u>        </u>
NR <sub>BU</sub>		ST <sub>BU</sub>		
<u>        </u>	x	<u>1416</u>	=	<u>        </u>
NR <sub>BUSL</sub>		ST <sub>BUSL</sub>		
<u>        </u>	x	<u>1760</u>	=	<u>        </u>
NR <sub>ANB</sub>		ST <sub>ANB</sub>		
<u>        </u>	x	<u>40</u>	=	<u>        </u>
NR <sub>SK</sub>		ST <sub>SK</sub>		
<u>        </u>	x	<u>40</u>	=	<u>        </u>
NR <sub>VEH</sub>		ST <sub>VEH</sub>		

         (from Figure 2-3)           
NR<sub>HRS</sub>

In-Shop ATON Equip Serv = 260

Maintenance Total =         

MAINTENANCE TOTAL         

ADMINISTRATION 825.50

TVB         

TVV         

SUBTOTAL OF AIDS WORKED BY BOAT         

SUBTOTAL OF AIDS WORKED BY LAND         

SUBTOTAL OF MISCELLANEOUS HOURS         

TOTAL WORK HOURS         

BILLETS FOR ANT =  $\frac{\text{TOTAL WORK HOURS}}{\text{AVAILABLE PRODUCTIVE HOURS/YEAR}}$

TOTAL WORK HOURS          divided by 1384 Hrs  
(1384 = PROD HRS/YR for dayworkers--5 days, 40 hrs/week)

BILLETS =         

Figure 2-5 (Cont'd)

## General

$WC_n$  = Work Count or Quantity

$ST_n$  = Standard Time in hours needed to accomplish 1 unit of  $WC_n$

$BCA_n$  = Boat Crew Allowance needed for operation of boat/vehicle

MAINT = Hours spent per year maintaining boats, vehicles and facility (see note 1)

ADMIN = Administration = 825.5 hours

TVB = Travel time by boat (see note 2)

TVV = Travel time by vehicle (see note 3)

MISC = Time for work not otherwise identified (see note 4)

PROD HRS/YR = Productive hours available for work per billet per year from Chapter 1

## PRIMARY AID RESPONSIBILITY

$WC_1$ = unlighted buoy sexennial relief + 10% discrepancy = (1/6 of year round buoys + all seasonal unlighted buoys) x 110%	$ST_1 = 0.77$
$WC_2$ = unlighted buoy annual inspection + 10% discrepancy = [(5/6 of year round unlighted buoys) / 2] x 110%	$ST_2 = 0.35$
$WC_3$ = unlighted buoy biennial inspection + 10% discrepancy = [(5/6 of year round unlighted buoys) / 2] x 110%	$ST_3 = 0.51$
$WC_4$ = seasonal unlighted buoy decommissioning/recommissioning (ST includes both)	$ST_4 = 0.42$
$WC_5$ = lighted buoy annual inspection/relief + 40% discrepancy = (Year round lighted buoys + lighted seasonal buoys) x 140%	$ST_5 = 0.80$
$WC_6$ = seasonal lighted decommissioning/recommissioning (ST includes both)	$ST_6 = 1.00$
$WC_7$ = lights (minor) annual inspection + 40% discrepancy = [Number of lights (Minor)] x 140%	$ST_7 = 0.70$
$WC_8$ = day beacon annual inspection + 10% discrepancy = (day beacons) x 110%	$ST_8 = 0.32$
$WC_9$ = private aid inspection	$ST_9 = 0.40$

## SECONDARY AID RESPONSIBILITY

$WC_{10}$ = 10% of unlighted aids (buoys + day beacons)	$ST_{10} = 0.35$
$WC_{11}$ = 40% of lighted buoys	$ST_{11} = 0.80$
$WC_{12}$ = 40% of lights (minor)	$ST_{12} = 0.70$

## Exhibit 2-1 Definitions

### BOAT, VEHICLE AND FACILITY MAINTENANCE

NR <sub>TANB</sub>	= No. of TANBs maintained	ST <sub>TANB</sub>	= 664 hrs
NR <sub>BU</sub>	= No. of 45' BUs maintained	ST <sub>TANB</sub>	= 1592 hrs
NR <sub>BUSL</sub>	= No. of 46' BUSLs maintained	ST <sub>BU</sub>	= 1416 hrs
NR <sub>ANB</sub>	= No. of ANBs maintained	ST <sub>BUSL</sub>	= 1760 hrs
NR <sub>SK</sub>	= No. of SKBs/SKLs maintained	ST <sub>ANB</sub>	= 40 hrs
NR <sub>VEH</sub>	= No. of Vehicles maintained (not GSA)	ST <sub>SK</sub>	= 40 hrs
NR <sub>HRS</sub>	= No. of Hours for building maintained:	ST <sub>VEH</sub>	= Determined from worksheets in Figure 2-3

### NOTES

1. (a) Boat and Vehicle Maintenance. Standard maintenance times for boats and vehicles are based on service wide averages. Boat trailer maintenance is included in the standard time for TANB maintenance. If a Unit's maintenance hours vary significantly the empirical data should be used. Documentation for at least 3 years must be provided to justify data.
  - (b) Facility Maintenance. Standard maintenance times for the unit's work station are not available; therefore, GSA standards will be used. Determine time spent on building maintenance by completing the worksheets in Figure 2-3. If the ANT is physically located within, and sharing the building with another unit, use Method 1. If it is operating out of its own building use Method 2.
  - (c) ATON Equipment Maintenance. A standard time to account for servicing ATON equipment in-shop is included in the maintenance total (5 hrs/week). If the Unit's in-shop maintenance varies significantly it should be used and documentation supplied.
2. Calculate TVB for each ANT boat by multiplying the total time underway (total resource hours taken from the Abstract of Operations report) by the respective Boat Crew Allowance (Figure 2-4). Then subtract the subtotal of aids worked by boat.
  3. Calculate TVV by dividing the total mileage by the average speed traveled and then multiplying the result by the appropriate Boat Crew Allowance. Use 714.29 hours (the Coast Guard average) if the actual mileage cannot be documented (714.29 = 25,000 miles divided by 35 mph).

Exhibit 2-1 Definitions (Cont'd)



# ANT RATE STRUCTURE

TEAM SIZE	BM				MK				SN	FN
	E-7	E-6	E-5	E-4	E-7	E-6	E-5	E-4		
3		1					1		1	
4		1					1		1	1
5		1					1		2	1
6	1		1			1		1	1	1
7	1	1		1		1		1	1	1
8	1	1		2		1		1	1	1
9	1	1		2		1		1	2	1
10	1	1	1	1		1		1	3	1
11	1	1	1	1		1		1	3	2

1. If more than 11 billets are required, the appropriate rates will be assigned in accordance with operational needs.
2. A Quartermaster billet (QM2, QM3) may be assigned in lieu of a Boatswain's Mate for buoy positioning and chart maintenance/correction. Justification is necessary for this substitution to be considered.
3. ET and/or EM billets can be substituted for SN/FN billets at units where there are high demands for their skills and ET and or EM support is not otherwise available. Justification is necessary for this substitution.

Figure 2-6

## SAMPLE CALCULATION

DETERMINE THE NUMBER OF BILLETS AUTHORIZED FOR THE FICTIONAL ANT OKLAHOMA CITY.

The ANT is responsible for:

- 31 lighted buoys (seasonal)
- 168 unlighted buoys (seasonal)
- 84 unlighted buoys
- 30 secondary aids (18 L.B., 12 U.L.B.)
- 98 lights (minor)
- 102 daybeacons
- 46 private aids

The team has 1 - 46' BUSL, 1 -45' BU, 1 TANB and 1 Vehicle. They share a building with another unit and operate on a 5 day, 40 hour workweek.

In addition, the following factors must be considered:

- a. all buoys are worked from either the BU or BUSL.
- b. 75 lights (minor) are accessible by water only and worked from the TANB.
- c. 65 daybeacons are accessible by water only and worked from the TANB.
- d. all private aids are normally inspected from the TANB.
- e. all remaining aids are worked from the land vehicle.

Before proceeding, review the following abbreviations and definitions:

WC = Work Count = quantity (of a particular type).

ST = Standard Time = time needed to perform a certain task.

BCA = Boat Crew Allowance of the boat or vehicle normally performing the work count, see Figure 2-4.

DISCREPANCY = Buoy or aid not watching properly.

DISCREPANCY RATE = Percent of time a buoy or aid is not watching properly.

GIVENS:

DISCREPANCY RATE = 10% for all unlighted buoys and aids; 40% for all lighted aids, buoys and sound signals.

BOAT CREW ALLOWANCE = See Figure 2-4.

Exhibit 2-2

Example Calculation

AIDS TO NAVIGATION TEAMS  
DATA COLLECTION WORKSHEET  
ANT OKLAHOMA CITY

<u>AID TYPE</u>	<u>PRIMARY RESPONSIBILITY</u>		<u>SECONDARY RESPONSIBILITY</u>	
	<u>WORK VEHICLE</u>	<u>QUANTITY</u>	<u>WORK VEHICLE</u>	<u>QUANTITY</u>
LIGHTED BUOYS				
1. SEASONAL	<u>BUSL/BU</u>	<u>31</u>	<u>-</u>	<u>0</u>
2. YEAR ROUND	<u>-</u>	<u>0</u>	<u>BUSL/BU</u>	<u>18</u>
UNLIGHTED BUOYS				
1. SEASONAL	<u>BUSL/BU</u>	<u>168</u>	<u>-</u>	<u>0</u>
2. YEAR ROUND	<u>BUSL/BU</u>	<u>84</u>	<u>BUSL/BU</u>	<u>12</u>
LIGHTS, MINOR				
1. BY BOAT	<u>TANB</u>	<u>75</u>	<u>-</u>	<u>0</u>
2. BY TRUCK	<u>TRUCK</u>	<u>23</u>	<u>-</u>	<u>0</u>
DAY BEACONS				
1. BY BOAT	<u>TANB</u>	<u>65</u>	<u>-</u>	<u>0</u>
2. BY TRUCK	<u>TRUCK</u>	<u>37</u>	<u>-</u>	<u>0</u>
PRIVATE AIDS				
1. BY BOAT	<u>TANB</u>	<u>46</u>	<u>-</u>	<u>0</u>
2. BY TRUCK	<u>-</u>	<u>0</u>	<u>-</u>	<u>0</u>

<u>BOATS AND VEHICLES</u>	<u>TOTAL RESOURCE HOURS</u>	<u>QUANTITY</u>
1. TANB	<u>300</u>	<u>1</u>
2. BU	<u>48</u>	<u>1</u>
3. BUSL	<u>702</u>	<u>1</u>
4. ANB	<u>0</u>	<u>0</u>
5. SKB/SKL	<u>0</u>	<u>0</u>
	<u>MILEAGE</u>	
6. TRUCK	<u>25,000</u>	<u>1</u>

Exhibit 2-2 (Cont'd)

Example Continued

FACILITY MAINTENANCE CALCULATIONS FOR THE UNIT'S WORK STATION

A. METHOD 1 -- This method is used when the ANT is physically located in another unit's building. Provide square footage for all applicable areas. (Include only area maintained by ANT)

AREA AFFECTED	SQFT	GSA FACTOR	
Workshop Space Cleaning (Interior floor, walls, and ceiling)	<u>1365</u>	x 69.8 =	<u>95277</u>
Daily Room Cleaning (Interior floor area)	<u>200</u>	x 83.2 =	<u>16640</u>
Complete Room Cleaning (Interior floor, walls, and ceiling)	<u>1000</u>	x 38.4 =	<u>38400</u>
Strip and Refinish floor (Interior floor space affected)	<u>1300</u>	x 5.3 =	<u>6890</u>
Paper and Trash collection (Interior floor space)	<u>1300</u>	x 3.9 =	<u>5070</u>
High Area Cleaning (Interior walls and ceiling)	<u>800</u>	x 4.0 =	<u>3200</u>
Storage Areas (Interior floor, walls, and ceiling)	<u>300</u>	x 3.8 =	<u>1140</u>
Sweep Corridors (Interior floor space affected)	<u>200</u>	x 14.9 =	<u>2980</u>
Vacuum Carpets (Carpeting affected)	_____	x 9.6 =	_____
Outside Policing (Grounds affected)	<u>134000</u>	x 1.4 =	<u>187600</u>
Outside Manual Sweeping (Grounds, sidewalk area affected)	<u>500</u>	x 1.9 =	<u>950</u>
Outside Grounds Care (Grounds area affected)	<u>134000</u>	x 1.0 =	<u>134000</u>
		FACTOR =	<u>492147</u>
		x .001	
(Manhours of maintenance/thousand sqft)		TOTAL =	<u>492</u>

Exhibit 2-2 (Cont'd)

The definition of work count -- Work Count 1 through Work Count 12 and the Standard Times (ST) for each work count are given in Exhibit 2-1 definitions.

The calculations involved are described below:

1.  $WC_1$  = 1/6 unlighted buoys + all seasonal unlighted buoys + 10% discrepancy

$$\begin{aligned} WC_1 &= [(1/6 \times 84) + 168] \times 1.10 \\ &= [14 + 168] \times 1.10 \\ &= 182 \times 1.10 \\ WC_1 &= 200.2 \end{aligned}$$

Unlighted buoys are relieved on a six year schedule. Dividing the total number by 6, yields the number relieved per year.

---

2.  $WC_2$  = 5/6 of all unlighted buoys divided by 2, + 10% discrepancy

$$\begin{aligned} WC_2 &= [(5/6 \times 84) / 2] \times 1.10 \\ &= [70 / 2] \times 1.10 \\ &= 35 \times 1.10 \\ WC_2 &= 38.5 \end{aligned}$$

$WC_2$  does not include seasonal buoys. Each unlighted buoy is visited annually while on station.

---

3.  $WC_3$  = calculated the same as  $WC_2$   
 $WC_3$  = 38.5
- 

4.  $WC_4$  = all unlighted seasonal buoy decommissionings  
 $WC_4$  = 168

This is the annual decommissioning of the seasonal buoy. No discrepancy rate is added since the aids are removed.

Exhibit 2-2 (Cont'd)

5.  $WC_5$  = all lighted buoys + lighted seasonal buoys + 40%  
discrepancy rate  
 $WC_5$  =  $(0 + 31) \times 1.40$   
 $= 31 \times 1.40$   
 $WC_5$  = 43.4

Lighted buoys sexennial relief and interim inspection are assumed to take the same length of time to perform.

---

6.  $WC_6$  = All lighted seasonal buoy decommissionings  
 $WC_6$  = 31

Calculated the same as  $WC_4$

---

7.  $WC_7$  = All lights (minor) + 40% discrepancy

$$WC_{7a} = 75 \times 1.40 \text{ (Worked by TANB)}$$
$$= 105$$

$$WC_{7b} = 23 \times 1.40 \text{ (Worked by land vehicle)}$$
$$= 32.2$$

There are 98 lighted aids, however, 75 were reported as being worked by TANB, leaving 23 to be worked by vehicle. Each should be calculated separately yielding  $WC_{7a}$  and  $WC_{7b}$ .

---

8.  $WC_8$  = ALL unlighted Day Beacons + 10% discrepancy

$$WC_{8a} = 65 \times 1.10 \text{ (Worked by TANB)}$$
$$= 71.5$$

$$WC_{8b} = 37 \times 1.10 \text{ (Worked by land vehicle)}$$
$$= 40.7$$

There are 102 Day Beacons, 65 are worked by TANB, leaving 37 to be worked by vehicle. Each should be calculated separately yielding  $WC_{8a}$  and  $WC_{8b}$ . For these calculations, Day Beacons are assumed to be checked annually.

---

9.  $WC_9$  = All private aids  
 $WC_9$  = 46

Annual inspection of private aids.

Exhibit 2-2 (Cont'd)

10.  $WC_{10} = 10\%$  of all secondary unlighted aids

$$\begin{aligned} WC_{10} &= 12 \times .10 \\ &= 1.2 \end{aligned}$$

$WC_{11}$  and  $WC_{12}$  are calculated the same as  $WC_{10}$

$$\begin{aligned} WC_{11} &= 40\% \text{ of lighted buoys} \\ &= 18 \times .40 = 7.2 \end{aligned}$$

$$\begin{aligned} WC_{12} &= 40\% \text{ of lights (minor)} \\ &= 0 \end{aligned}$$

A secondary unit response survey showed that of all the unlighted aids, the secondary unit will work the aid 10% of the time. No discrepancy rate is added.

---

11. Total maintenance hours = (Summation of  $ST_n \times NR_n$ )

TANB	=	664	x	1	=	664		SKB/SKL	=	40	x	0	=	0
BU	=	1592	x	1	=	1592		VEHICLE	=	40	x	1	=	40
BUSL	=	1416	x	1	=	1416		FACILITY					=	492
ANB	=	1760	x	0	=	0								

$$\text{TOTAL} = 4204 \text{ hrs} + 260 \text{ (ATON equip serv)} = 4464 \text{ hrs}$$

---

12.  $TVB = [(Total \text{ Resource Hours (from Figure 2-2) for each boat}) \times (\text{that boat's BCA})] - [\text{the subtotal of Aids worked by Boat (taken from Figure 2-5 Worksheet)}]$ .

$$\begin{array}{rcl} \text{TANB} & 300 \times 3 & = 900 \\ \text{BU} & 48 \times 4 & = 192 \\ \text{BUSL} & 702 \times 4 & = \underline{2808} \\ & & 3900 \end{array}$$

$$\begin{aligned} TVB &= 3900 - 1460.12 \\ &= 2439.88 \end{aligned}$$

---

13.  $TVV$  = This variable is based on mileage driven, not necessarily time. To calculate  $TVV$ , take the yearly total of miles driven and divide by the average speed. The result is then multiplied by crew size. If the average speed and total mileage are not available, use estimates of 25,000 miles driven at 35 mph.

$$\begin{aligned} TVV &= (25,000 \text{ miles} / 35 \text{ mph}) \times 2 \\ &= 714.29 \times 2 \\ &= 1428.58 \end{aligned}$$

Exhibit 2-2 (Cont'd)

#### 14. Billet Authorization Calculation.

Formula for Number of Billets:

$$\frac{[(\text{Summation of } WC_n \times St_n \times BCA_n) + \text{MAINT} + \text{ADMIN} + \text{TVB} + \text{TVV} + \text{MISC}]}{(\text{PROD HRS/YR})}$$

The sum of all work count subtotals and the five variables is divided by the available productive hours for dayworkers per year.

$$\begin{array}{rcl} 1734.37 & = & \text{The sum of } (WC_1 \times ST_1 \times BCA_1) \text{ through} \\ & & (WC_{12} \times ST_{12} \times BCA_{12}) \\ 4464.00 & = & \text{MAINT} \\ 825.50 & = & \text{ADMIN} \\ 2439.88 & = & \text{TVB} \\ 1428.58 & = & \text{TVV} \\ \hline 10892.33 & & \end{array}$$

$$\text{Billets} = 10892.33 / 1384 = 7.87 \text{ (where } 1384 = \text{PROD HRS/YR)}$$

7.87 is rounded up to 8 billets. If the total had amounted to less than 7 billets, the fractional staffing standards found in Chapter 1 would have been used.

The 8 billets are compared with Figure 2-6 to determine the team's appropriate rate structure. Qualification codes may be obtained through referencing the Enlisted Qualifications Manual, COMDTINST M1414.8(series).

Exhibit 2-2 (Cont'd)



# AIDS TO NAVIGATION TEAMS WORKSHEET

TOTAL HOURS OF AIDS WORKED				BY BOAT	BY LAND
$\frac{200.2}{WC_1}$	$\times \frac{0.77}{ST_1}$	$\times \frac{4}{BCA_1}$	=	<u>616.62</u>	<u>--</u>
$\frac{38.5}{WC_2}$	$\times \frac{0.35}{ST_2}$	$\times \frac{4}{BCA_2}$	=	<u>53.90</u>	<u>--</u>
$\frac{38.5}{WC_3}$	$\times \frac{0.51}{ST_3}$	$\times \frac{4}{BCA_3}$	=	<u>78.54</u>	<u>--</u>
$\frac{168}{WC_4}$	$\times \frac{0.42}{ST_4}$	$\times \frac{4}{BCA_4}$	=	<u>282.24</u>	<u>--</u>
$\frac{43.4}{WC_5}$	$\times \frac{0.80}{ST_5}$	$\times \frac{4}{BCA_5}$	=	<u>138.88</u>	<u>--</u>
$\frac{31}{WC_6}$	$\times \frac{1.00}{ST_6}$	$\times \frac{4}{BCA_6}$	=	<u>124.00</u>	<u>--</u>
$\frac{105}{WC_{7a}}$	$\times \frac{0.70}{ST_{7a}}$	$\times \frac{3}{BCA_{7a}}$	=	<u>220.50</u>	<u>--</u>
$\frac{32.2}{WC_{7b}}$	$\times \frac{0.70}{ST_{7b}}$	$\times \frac{2}{BCA_{7b}}$	=	<u>--</u>	<u>45.08</u>
$\frac{71.5}{WC_{8a}}$	$\times \frac{0.32}{ST_{8a}}$	$\times \frac{3}{BCA_{8a}}$	=	<u>68.64</u>	<u>--</u>
$\frac{40.7}{WC_{8b}}$	$\times \frac{0.32}{ST_{8b}}$	$\times \frac{2}{BCA_{8b}}$	=	<u>--</u>	<u>26.05</u>
$\frac{46}{WC_9}$	$\times \frac{0.40}{ST_9}$	$\times \frac{3}{BCA_9}$	=	<u>55.20</u>	<u>--</u>
$\frac{1.2}{WC_{10}}$	$\times \frac{0.35}{ST_{10}}$	$\times \frac{4}{BCA_{10}}$	=	<u>1.68</u>	<u>--</u>
$\frac{7.2}{WC_{11}}$	$\times \frac{0.80}{ST_{11}}$	$\times \frac{4}{BCA_{11}}$	=	<u>23.04</u>	<u>--</u>
$\frac{0}{WC_{12}}$	$\times \frac{0.70}{ST_{12}}$	$\times \frac{\quad}{BCA_{12}}$	=	<u>--</u>	<u>--</u>
SUBTOTAL AIDS WORKED BY BOAT				<u>1663.24</u>	
SUBTOTAL AIDS WORKED BY LAND					<u>71.13</u>

Exhibit 2-2 (Cont'd)

AIDS TO NAVIGATION TEAMS  
WORKSHEET (Cont'd)

MAINTENANCE:

$$\frac{1}{NR_{TANB}} \times \frac{664}{ST_{TANB}} = \frac{664}{}$$

$$\frac{1}{NR_{BU}} \times \frac{1592}{ST_{BU}} = \frac{1592}{}$$

$$\frac{1}{NR_{BUSL}} \times \frac{1416}{ST_{BUSL}} = \frac{1416}{}$$

$$\frac{0}{NR_{ANB}} \times \frac{1760}{ST_{ANB}} = \frac{0}{}$$

$$\frac{0}{NR_{SK}} \times \frac{40}{ST_{SK}} = \frac{0}{}$$

$$\frac{1}{NR_{VEH}} \times \frac{40}{ST_{VEH}} = \frac{40}{}$$

$$\frac{492}{NR_{HRS}} \text{ (from Figure 2-10)} = \frac{492}{}$$

$$\text{In-Shop ATON Equip Serv} = \frac{260}{}$$

$$\text{Maintenance Total} = \frac{4464}{} \quad \text{MAINTENANCE TOTAL} \quad \frac{4464.00}{}$$

$$\text{ADMINISTRATION} \quad \frac{825.50}{}$$

$$\text{TVB} \quad \frac{2439.88}{}$$

$$\text{TVV} \quad \frac{1428.58}{}$$

$$\text{SUBTOTAL OF AIDS WORKED BY BOAT} \quad \frac{1663.24}{}$$

$$\text{SUBTOTAL OF AIDS WORKED BY LAND} \quad \frac{71.13}{}$$

$$\text{SUBTOTAL OF MISCELLANEOUS HOURS} \quad \frac{\quad}{}$$

$$\text{TOTAL WORK HOURS} \quad \frac{10892.33}{}$$

$$\text{BILLETS FOR ANT} = \frac{\text{TOTAL WORK HOURS}}{\text{AVAILABLE PRODUCTIVE HOURS/YEAR}}$$

$$\text{BILLETS} = \frac{10892.33}{\text{divided by 1384}}$$

$$\text{BILLETS} = \frac{7.87}{}$$

Exhibit 2-2 (Cont'd)

6. Major Aid Staffing Calculations. The calculations for major aids to navigation involves first, the calculation of the technical billets for signal maintenance; and second, the calculation of billets for the daymarks structural maintenance. Both parts require the collection of data about each major aid maintained.
- a. Step one: Collect all workload information for each major aid and calculate the number of billets needed for equipment maintenance. Figure 2-7 is a sample data collection form and Figure 2-8 is a sample summary sheet. Steps to be performed include:
- (1) Add all of the equipment maintenance work hours by individual rating.
  - (2) Multiply the equipment maintenance work hours by the appropriate correction factor for administrative work.
  - (3) Calculate the travel time for the primary servicing unit. Do this by adding that portion of the resource hours from the Abstract of Operations devoted to major aids maintenance to the time spent traveling by vehicle. Remember to use resource hours for major aids maintenance only. Use information from boat and/or unit logs for documentation. Calculate the vehicle travel time by dividing the vehicle mileage traveling to and from major aids by 35 MPH. If the mileage is not known, use the Coast Guard average of 25,000 miles/unit.
  - (4) After adding all of the above together, divide the total by the available time for day work from Chapter 1 of this manual. This will yield the required number of specialty billets needed for equipment maintenance. If a fractional billet results from this step and the whole number of billets is less than 7, use the fractional staffing calculation found in Chapter 1. Figure 2-9 shows the proper rate combination for the number of billets needed.
- b. Use Figure 2-2 to calculate the major aids maintenance requirement. When total maintenance hours per thousand square feet have been determined they are applied to Figure 2-8, where they are added together and divided by the available productive hours in a year. Figure 2-10 shows the rating assignment for the number of billets calculated.
- c. Exhibit 2-3 is a complete step-by-step example.

Major Aid \_\_\_\_\_  
 District \_\_\_\_\_  
 Group \_\_\_\_\_  
 Primary Servicing Unit \_\_\_\_\_

System/Equipment	EM	ET	MK
Main light			
Emergency Light			
Main Sound Signal			
Emergency Sound Signal			
Radio Beacon			
Audiovisual controller & Navaid Sensor			
Monitor Control Remote Unit			
Monitor Link - Aid Transceiver			
Fog Detector			
12V Battery Charger			
12V Battery System			
Fire Suppression System (Signal)			
E/G System (Prime/Standby)			
Power System Controller			
Environmental Controller			
Fuel Day Tank Assembly			
24V Battery Charger			
24V Battery System			
Fire Suppression System (Power)			
Main Fuel System			
Commercial Power Sys.			
TOTAL			

Figure 2-7

## ANNUAL WORK HOURS FOR MAJOR AID MAINTENANCE SUMMARY BY RATING

[illegible]

Travel time: Boat resource hours = \_\_\_\_\_ hrs

$$\frac{\text{Vehicle miles}}{35 \text{ MPH}} = \frac{\quad}{35 \text{ MPH}} = \quad \text{hrs}$$

Boat + Vehicle travel hours = \_\_\_\_\_ hrs

Figure 2-8

ANNUAL WORK HOURS FOR  
MAJOR AID MAINTENANCE  
SUMMARY BY RATING

$\frac{\text{EM TOTAL}}{\text{TIME AVAILABLE FOR WORK}} = \underline{\hspace{2cm}} = \underline{\hspace{2cm}} \text{ EM BILLETS}$

$\frac{\text{ET TOTAL}}{\text{TIME AVAILABLE FOR WORK}} = \underline{\hspace{2cm}} = \underline{\hspace{2cm}} \text{ ET BILLETS}$

$\frac{\text{MK TOTAL}}{\text{TIME AVAILABLE FOR WORK}} = \underline{\hspace{2cm}} = \underline{\hspace{2cm}} \text{ MK BILLETS}$

Facilities Maintenance Billets

Use the worksheets in Figure 2-2 to determine maintenance hours for all major aid structures and the work station.

Add the maintenance totals together to derive maintenance hours per thousands of square feet. The result is then divided by time available for daywork in a year (See Chapter 1).

Example of formula layout:

$\begin{array}{rcl} & \underline{\hspace{2cm}} & \text{Total maintenance hours for all Major Aid Structures} \\ + & \underline{\hspace{2cm}} & \text{Total maintenance hours for the work station} \\ = & \underline{\hspace{2cm}} & \text{Maint. Hrs/Ksqft} \end{array}$

$\frac{\text{Maint. Hrs/Ksqft}}{1384 \text{ Hrs/yr}}$  (based on 5 days, 40 hrs/week)

Yields  $\underline{\hspace{2cm}}$  Billets

Figure 2-8 (Cont'd)

# ET, EM and MK Billet Rate Structure

## Billets/Rate

	E-7	E-6	E-5	E-4
1			1	
2		1		1
3		1	1	1
4		1	1	2
5	1	1	1	2

Figure 2-9

# Facilities Maintenance Rate/Rating Structure

## Billets/Rating /Rate

	E-6	DC E-5	E-4	E-6	BM E-5	E-4	SN/FN
2	1				1		
3	1				1		1
4	1				1		2
5	1				1		3
6	1		1		1		3
7	1		1		1		4
8	1		1		1		5
9	1		1	1		1	5
10	1		1	1		1	6

Figure 2-10

Major Aid DANGEROUS BEND  
District 2  
Group TULSA  
Primary Servicing Unit ANT OKLAHOMA CITY

<u>System/Equipment</u>	<u>EM</u>	<u>ET</u>	<u>MK</u>
<u>Main light</u>	3.75		
<u>Emergency Light</u>	1.90		
<u>Main Sound Signal</u>	4.50		
<u>Emergency Sound Signal</u>	1.90		
<u>Radio Beacon</u>		96.00	
<u>Audiovisual controller &amp; Navaid Sensor</u>		12.00	
<u>Monitor Control Remote Unit</u>		6.00	
<u>Monitor Link - Aid Transceiver</u>		5.00	
<u>Fog Detector</u>		18.00	
<u>12V Battery Charger</u>	5.00		
<u>12V Battery System</u>	4.50		
<u>Fire Suppression System (Signal)</u>	3.00		
<u>E/G System (Prime/Standby)</u>			7.50
<u>Power System Controller</u>		12.00	
<u>Environmental Controller</u>	6.00		
<u>Fuel Day Tank Assembly</u>			
<u>24V Battery Charger</u>	5.00		
<u>24V Battery System</u>	4.50		
<u>Fire Suppression System (Power)</u>	3.00		
<u>Main Fuel System</u>			
<u>Commercial Power Sys.</u>	6.00		
<u>TOTAL</u>	49.05	149.00	7.50

Exhibit 2-3 (Cont'd)



FACILITY MAINTENANCE CALCULATIONS FOR MAJOR AID STRUCTURES  
Complete this worksheet for each major aid serviced. Provide square footage for all applicable areas.

MAJOR AID DANGEROUS BEND

AREA AFFECTED	SQFT	GSA FACTOR	
Complete Room Cleaning (Interior floor, walls, and ceiling)	<u>8000</u>	x 9.60	= <u>76800</u>
Paper and Trash collection (Interior floor space)	<u>500</u>	x 0.14	= <u>70</u>
Utility Work (Interior building space)	<u>8000</u>	x 0.10	= <u>800</u>
High Area Cleaning (Interior walls and ceiling)	<u>6400</u>	x 3.96	= <u>25344</u>
Storage Areas (Interior floor, walls, and ceiling)	<u>2000</u>	x 0.96	= <u>1920</u>
Police Garage (Interior garage space)	<u>2500</u>	x 0.32	= <u>800</u>
Outside Policing (Grounds area affected)	<u>150000</u>	x 0.32	= <u>48000</u>
Outside Manual Sweeping (Grounds, sidewalk area affected)	<u>1000</u>	x 1.92	= <u>1920</u>
Outside Grounds Care (Grounds area affected)	<u>150000</u>	x 0.96	= <u>144000</u>
Sweep Corridors (Interior floor space affected)	_____	x 0.58	= _____
Quarterly Room Cleaning (Interior floor area)	<u>500</u>	x 3.20	= <u>1600</u>
Workshop Space Cleaning (Interior floor, walls, and ceiling)	<u>2000</u>	x 69.76	= <u>139520</u>
Structural, Electrical, Painting, and Plumbing (Interior floor, walls, and ceiling, and all exterior walls)*	<u>20000</u>	x 19.20	= <u>384000</u>
		FACTOR	= <u>824774</u>
		x .001	
(Manhours of maintenance/thousand sqft)		TOTAL	= <u>825</u>

\*Taken from Air Force Maintenance Standards

Exhibit 2-3 (Cont'd)

ANNUAL WORK HOURS FOR  
MAJOR AID MAINTENANCE  
SUMMARY BY RATING

Major Aid	EM	ET	MK	HRS/KSQFT
OSAGE SHOAL	47.15	35.00	28.50	189
MUSKOGEE'S REEF	49.05	131.00	28.50	206
LAWTON SHOAL	49.05	131.00	7.50	929
PAWNEE PASSAGE	49.05	126.00	7.50	124
WICHITA REEF	49.05	35.00	7.50	631
OZARK REEF	49.05	35.00	7.50	308
DANGEROUS BEND	49.05	149.00	7.50	825
DUNCAN SHOAL	49.05	131.00	7.50	345
ANT Oklahoma City Comm Center:				
Monitor Control System		12.00		
Monitor Link				
Master Transceiver		18.00		
Equipment Maintenance Workload Subtotal	390.50	803.00	102.00	
Administrative Correction factor	x 1.14	x1.19	x1.158	
(=)	445.2	955.6	118.1	
Travel Time (+)	1263.3	1263.3	1263.3	
TOTAL WORK HOURS	1708.5	2218.9	1381.4	3557

Travel time: Boat resource hours = 549.00 hrs

Vehicle miles =  $\frac{25,000}{35 \text{ MPH}}$  = 714.28 hrs

Boat + Vehicle travel hours = 1263.28 hrs

Exhibit 2-3 (Cont'd)

## 2.C. LORAN Stations.

1. Introduction. The LORAN station is a Coast Guard shore unit designed and equipped to provide precision timed, pulsed, low and medium-frequency radio transmissions. Each LORAN station is part of a group of synchronized LORAN stations designated as a chain. The LORAN chain is comprised of a master transmitting station, one secondary transmitting station in the case of LORAN-A, and one or more secondary transmitting stations and a chain control/monitor function in the case of LORAN-C. The control/monitor function can be located at and be a part of either a master or secondary transmitting station or established elsewhere as a separate unit. In order to accomplish the mission, LORAN stations are equipped with timing, receiving, monitor and control, transmitting, alarm, and communications equipment. This equipment is housed in structures that provide security and environmental control. All stations have separate power generation capacity. Some LORAN stations operate in an unwatched mode unless a control function is assigned, in which case a station maintains a twenty-four hour, two position watch consisting of a live electronics technician watchstander and one duty technician/safety observer.

### 2. Definitions.

- a. LORAN. An acronym for Long Range Navigation which, in this section, refers to both "A" and "C" systems.
- b. Unwatched Mode - Maintained by some master and secondary transmitting stations not having a control/monitor function. It requires one watchstander to remain on board at all times. He may sleep-in at night but must remain within audible range of the equipment alarms. In addition, a duty technician/ safety observer must be on 30 minute station recall.
- c. Control/Monitor Function - Requires a twenty-four hour, two position watch consisting of a live ET watchstander and one duty technician on immediate recall who may sleep in at night. Control and operation of a LORAN chain is accomplished through both a remote control teletype interface capable of direct insertion of local corrections, and a backup administrative teletype/ land line alarm actuated communication to arouse the remote station sleep-in watches.
- d. CONUS - For Loran staffing purposes this refers to stations located:
  - (1) In the contiguous 48 states.
  - (2) On the five principal Hawaiian Islands.
  - (3) On continental Alaska or the Island of Kodiak.

- 2.C.2.e. Overseas - Refers to all stations not in CONUS and not considered isolated/restricted.
- f. Isolated/Restricted - Those stations located in generally uninhabited or underdeveloped areas such that normal civilian community support facilities are not available. Lack of such support precludes the authorization for accompanied tours.
3. Standards. Station staffing as developed in this section shall serve as a guide for determining basic staffing levels for LORAN stations with the new timing and control equipment (LRE) installed. LORAN-A stations without this equipment will continue present staffing until disestablishment. It is still necessary to evaluate each station according to function within the chain, type of equipment installed, climate, location, availability of support facilities, reliability of primary communications, community relations, special missions performed and any non-LORAN functions that may be assigned. Applicable exceptions should be specifically detailed with workload data when either requesting allowance changes or staffing new stations.
4. Staffing Requirements. Total LORAN station staffing requirements are governed by the following parameters:
- a. Station location.
  - b. Station watchstanding requirements.
  - c. Electronic Equipment maintenance.
  - d. Availability of commercial power.
  - e. Facility maintenance.
5. Staffing Calculation Sequence. LORAN Station staffing requirements will be calculated in five functional areas based on varying support criteria as detailed below:
- a. Command/Supervision - Based on the geographic location of station.
  - b. Watchstanding - Based on the function of the station in the chain and equipment installed.
  - c. Electronic Equipment Maintenance - Based on the function of the station in the chain.
  - d. Facility Maintenance - Based on the geographic location of the station and the availability of reliable commercial utilities and transportation.
  - e. General Support - Based on the geographic location of the station and the number of billets assigned.

- 2.C.6. Command/Supervisor Standards IORAN-C. - Command and supervisor billets will be assigned as depicted in Figure 2-11.

COMMAND/SUPERVISOR STANDARDS

	<u>CONUS</u>	<u>Overseas</u>	<u>Isolated/Restricted</u>
Commanding Officer	CWO (ELC)	LITJG	LITJG
Senior Electronic's Officer/Technician	ETC	CWO (ELC)	CWO (ELC)
Engineering Technician	MKI	MKC	MKC

Figure 2-11

7. Watchstanding Standards.

- a. Master and Secondary Stations Without the Control/Monitor Function. This requires an unwatched mode of one man on a twenty-four hour, sleep-in watch and a second man on thirty minute call at all times, as a safety observer. One of the two men must be qualified electronics technician. Using a modified sixty-eight hour workweek (man on thirty minute standby is credited with standing duty), eight men are required. (336 hours required to be covered by men working 43.27 hours) Since normal station complement exceeds eight men, there is no requirement for separate watchstanders as all station personnel below the senior technician will stand watches.
  - b. Master or Secondary Stations with a Control/Monitor Function. The control/monitor function imposes a two-position, continuous shift watch on the station. This watch is stood with the addition of five ET's to the basic station ET allowance for a total of nine watchstanders.
8. Electronic Equipment Maintenance. This maintenance includes the servicing of all electronic and teletype equipment. Equipment maintenance staffing will be assigned as depicted in Figure 2-12 and supplemented with an appropriate number of watchstanders and supervisors.

### EQUIPMENT MAINTENANCE STANDARDS

<u>CONUS</u>	<u>Overseas</u>	<u>Isolated/Restricted</u>
	ETC	ETC
ET1	ET1	ET1
ET2	ET2	ET2
2-ET3	2-ET3	2-ET3

Figure 2-12

### FACILITY MAINTENANCE STANDARDS

<u>Facility with Commercial Power</u>	<u>Facility Generating Own Power</u>	<u>Facility Generating Own Power (Watchstanding)</u>
FN	FN	MK1
2-SN/FN	2-SN/FN	MK3
		EM1
		2-FN
		2-SN

Figure 2-13

9. Facility Maintenance. Loran stations not directly supported by DOD forces, an industrial facility, or contract maintenance, will be assigned billets as listed in Figure 2-13. Comparable grade civilian positions or foreign indigenous personnel may be substituted for military billets where feasible. Family housing maintenance standards are found in Chapter 4, Section I. Additional billets or upgrades of SN/FN billets for facility maintenance will be considered when workload data indicates a need and contract maintenance is unavailable. Total station workload should be documented and workload factors fully defined including climate, equipment and building age, size and construction material, maintenance intervals, and watchstanding requirements.

Example Summary of Supportive Workload Data for Facility Maintenance Billets:

	<u>Manhours Per Year</u>	
Generator Maintenance	MK/FN	1050
Generator Maintenance	EM	400
		<u>1450</u>
<u>Administration and Supply</u>		1820
<u>Utilities</u>		
Water distillation		230
Water storage		186
Landfill sewage		210
Building plumbing		100
Fuel storage'		88
Building electrical		<u>288</u>
		1102

<u>Vehicle and machinery maintenance</u>	<u>Manhours Per Year</u>
Air conditioning	50
4 Trucks	384
2 Snow blowers	576
2 Outboards	<u>140</u>
	1150

<u>Miscellaneous</u>	
Fuel truck driver	200
Snow blower operator	250
Boat Coxswain	200
Facility maintenance	3150
Ground maintenance	<u>640</u>
	4440

Housing maintenance - See Chapter 4, Section I.  
For 5 houses approximately 844 manhours

Total manhours required	10806
Manhours per billet	1820

$$\text{Billets required} = 10806/1820 = 5.94$$

A 35 hour workweek (1820 hr work year) was computed by including the allowance for leave in available work time derived from the continuous watchstanders 40 hour workweek.

Using Military overload criteria, billets would be provided:

MKC  
MK2  
EM1  
1-FN  
\*2-SN/FN

\*When an HS is assigned one billet would not be required if enough work is general housekeeping. Also, if a particular rating is needed, one SN may require upgrading.

Exhibit 2-4

- 2.C.10. General Support. Three types of general support may be provided: supply/administrative, ration preparation and medical. Additional staffing will be assigned as depicted in Figure 2-14.

GENERAL SUPPORT STANDARDS

	<u>CONUS</u>	<u>Overseas</u>	<u>Isolated/Restricted</u>
Supply/Admin	SK2	SK2	SK2
Ration			
Preparation *	SS2, SN	SS1, SN	SS1, SN
Medical **	HM2	HM2	HM2

\* Only assigned if station is not on subsistence and quarters.  
Overseas, isolated/restricted stations may substitute foreign indigenous personnel for SN billet.

\*\*Only assigned if Coast Guard or DOD medical care is not available.

Figure 2-14

11. Special Staffing. When the control/monitor function is performed at a unit other than a LORAN-C transmitting station, that unit will be supplemented by the following personnel:

CWO (ELC) command  
ET1 equipment  
ET2 maintenance  
4-ET3 one position continuous shift watchstanders -  
for a total of 0-1-6

12. Staffing Criteria Examples.

- a. (1) A master or secondary LORAN-C station is with commercial power to be located in CONUS. The standard staffing would be:

CWO (ELC)  
ETC  
ET1  
ET2  
2-ET3  
MK1  
FN  
2-SN/FN  
SK2  
for total of 0-1-10



2.C.12.a.(2) If the same station were located overseas with medical care available the allowance would be 1-1-10 with the addition of a LTJG.

- b. A master or secondary (LORAN-C) station is to be located in an isolated/restricted area without commercial power. The standard staffing would be:

LTJG  
CWO (ELC)  
ETC  
ET1  
ET2  
2-ET3  
MKC  
FN  
2-FN/SN  
SK2  
SS1  
Messman (SN)  
HM2 for a total of 1-1-13.

- c. A master or secondary LORAN-C station with a control/monitor function and commercial power available is to be located in CONUS. The standard staffing would be:

CWO (ELC)  
ETC  
ET1  
2-ET2  
6-ET3  
MK1  
FN  
2-SN/FN  
SK2 for a total of 0-1-15.

- d. A master or secondary (LORAN-C) station is to be located in an isolated/ restricted area without commercial power and no engineering watch requirement. The standard staffing would be:

LTJG  
CWO (ELC)  
ETC  
ET1  
ET2  
2-ET3  
MKC  
FN  
2-FN/SN  
SK2  
SS1  
Messman (SN)  
HM2 for a total of 1-1-13.

**SECTION D**  
**OMEGA STATIONS**  
**(To be developed)**

## 2.E. Cutters.

(Note: Boat Staffing Standards are found in Section G Figure 2-11)

1. Introduction. The staffing standards defined in this section reflect service-wide average staffing levels for all vessels of the same class. Where only one vessel of a particular class exists, the staffing standards mirror the current allowance. It is expected that there will be some variance in the standards among vessels of the same class. The variances should, however, be attributable to specialized circumstances such as geographic location, installation of nonstandard equipment, unique operations, etc. Variances from the standard are listed in the footnotes on page 2-40. Requests for allowance changes to existing vessels should delineate the special circumstances requiring a departure from these standards.
2. Staffing Standards. Cutter staffing standards are as depicted in the following tables.

	WHEC 378	WHEC 378 FRAM	WMEC 270	WMEC 210A	WMEC 210B	WMEC 210 MMA	WAGB 400
CAPT	1	1					1
CDR	1	1	1	1	1	1	1
LCDR	1	1	1	1	1	1	1
LT	1	3	2	2	2	2	2
LTJG	7	7	5	3	3	3	4
OFFICER TOTAL	11	13	9	7	7	7	9
CWO-BOSN	1	1					1
CWO-ELC	1	1	1				1
CWO-F&S	1	1	1				1
CWO-ENG	1	1	1	1	1	1	1
CWO-PYA							1(a)
WARRANT TOTAL	4	4	3	1	1	1	5
BMC	1	1	1	1	1	1	1
BM1	1	1		1	1	1	1
BM2	1	1	1	1	1	1	1
BM3	3	3	1	1	1	1	2
DCC	1	1					1
DC1			1	1	1	1	
DC2	1	1	1	1	1	1	1
DC3	1	1	2				1
EMCM							1
EMCS	1	1					1
EMC			1	1	1	1	1
EM1	1	1	1				2
EM2	1	1	1	1	1	1	1
EM3	2	2	2	2	2	2(e)	3
ETCS							1
ETC	1	1	1				1
ET1	2	2	2	1	1	1	1
ET2	1	2	2	1	1	1	1
ET3	2	3	4	1	1	1	3
FTC		1					
FT1	1(b)		1				
FT2	1	2	1				
FT3	1	3	1				
GMC	1	1					
GM1	1	1	1	1	1	1	1
GM2		1	1				
GM3	2	4	1				
HSC	1	1					
HS1			1				
HS2				1	1	1	
MKCM				1			1
MKCS	1	1					
MKC	2	1	2	2	2	2	2
MK1	4	4	3	2	2	2	4
MK2	3	3	2	2	1	2	2
MK3	5	4	4	3	4(d)	3	6
QMCM							1
QMC	1	1		1	1	1	
QM1	1	1	1	1	1		
QM2	1	1	1	1	1	1	1
QM3	2	3	2	1	1	2	4
RDC	1	1	1				
RD1	1	1					
RD2	2	3		1	1	1	
RD3	1	6					
RMC	1	1	1				1
RM1	1	1		1	1	1	1
RM2	2	2	1	1	1	1	3
RM3	3	4	2	2	2	2	3
SKC	1	1					1
SK1		1	1	1	1	1	1
SK2	1	1	1				1
SK3	1	2	1	1	1	1	2
SSCS	1	1					1
SSC			1	1	1	1	
SS1	2	2	1	1	1	1	2
SS2	2	2	1	1	1	1	2
SS3	5	5	3	2	2	2	5
STC	1	1					
ST1	1	1					
ST2	2	3					
ST3	3	4					
TT1		1					
TT2	1		1				1
YNC	1	1					1
YN1			1	1	1	1	1
YN2	1	1					1
YN3	1	1	1				2
MST1							1
MST3							3
FA	5	5	3	2	2	2	6
FN	10	10	6	4(1)	4(f)	4	9
SA	16	16	6	8	8	8	14
SN	22	21	12	10	8	8	19
ENLIST TOTAL(n)	137	154	87	66	63	63	125
GRAND TOTAL	152	171	99	74	71	71	139

Figure 2-15

	WPB 95REN	WPB 82ACD	WPB 110	WSES 110	WTGB 140	WTYM 110AB	WYTL 65ABD	WYTL 65C
LT			1	1	1			
LTJG	1	(1)	1		1			
OFFICER TOTAL	1	0	2	1	2	0	0	0
CWO-ENG					1			
WARRANT TOTAL	0	0	0	0	1	0	0	0
BMCN			1(j)					
BMC					1	1	1	1
BM1		1	1	1		1	1	1
BM2	1(k)	(1)	1	1				
BM3	1			1	1			
EMC						1		
EM1								
EM2			1(c)		1	1		
EM3	1(m)			1	1			
GM2			1			1		
MKCS								
MKC	1	1	1	1				
MK1	1				1	1	1	1
MK2		1	1	1		1	1	1
MK3	1		1	1	1	1		
OMCS				1				
OMC	1		1		1	1		
OM1				1				
OM2		1(l)	1					
OM3	1		1		1			
SS2	1	1	1	1	1	2		
FA					1	1		2
FN	1	2	1	2	1	2		
SA		1		2	2	4	2	2
SN	3	1	3	2	2	4	2	2
ENLISTED TOTAL	13	10	14	16	14	18	6	8
GRAND TOTAL	14	10	16	17	17	18	6	8

Figure 2-16

	WLB 180ABC	WLM 157	WLM 133	WLI 100ABC	WLI 65	WLIC 160	WLIC 75ABD	WLR 75	WLR 65
LCDR									
LT	1								
LTJG	2(o)	1							
OFFICER TOTAL	4	2	0	0	0	0	0	0	0
CWO-BOSN	1	1	1	1		1			
CWO-ENG	1	1					0	0	0
WARRANT TOTAL	2	2	1	1	0	1		1	
BMCN							1		
BMC	1	1	1	1	1	1	1	1	1
BM1	1		1	1					
BM2		1		1		1	1	2	1
BM3	1	1	1						
DC1	1		1			1	1	1	1
DC2		1	1						
EMC	1								
EM1		1							
EM2	1		1						
ET1	(s)								
ET2	1(t)	1							
GM2	1(q)								
HS3	1(v)								
MKC	2	1	1	1		1		1	1
MK1	1	1	1	1			1	1	1
MK2	2	1	1	1	1	1	2	1	1
MK3	2	1	1	1	2	1			
OM1	1	1							
OM2	1		1			1	1		
OM3	1(p)	1							
RM3	(v)								
SK2	1		(w)					1	
SK3		1						1	1
SS1	1	1	1	1		1	1		
SS2	1	1						1	1
SS3	2	1	1						
YN2	1		1(w)					1	1
YN3		1		(x)					
FA	1			1					
FN	2(u)	3	1	1		2	1	2	1
SA	6		3	2		3	3	4	2
SN	8(r)	7	5	2					
ENLISTED TOTAL	42	27	22	13	8	13	13	19	12
GRAND TOTAL	48	31	23	14	8	14	13	19	12

Figure 2-17

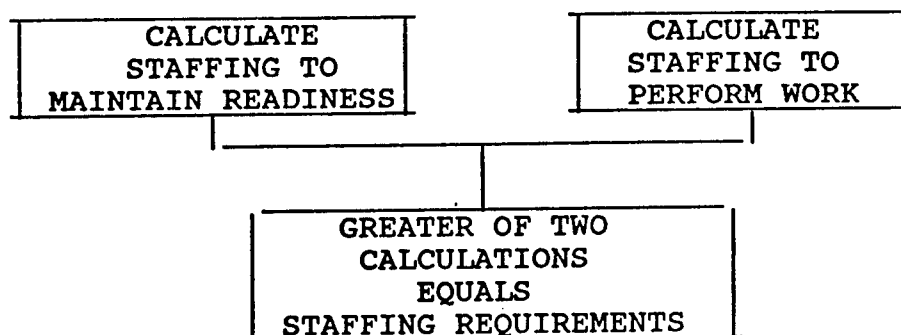
NOTES TO CUTTER STAFFING TABLES

- (a) TAD while deployed; from SUPCEN Seattle.
- (b) To provide adequate grade level distribution one half of the vessels have been assigned FTC's and the other half FT1's.
- (c) 110' WPB Notes:
  - (1) D11 & D5 have one 110' WPB EA with a LTJG/QM or BMCS Command Structure
  - (2) D1 & D17 have one 110' WPB EA with a CWO/QM or BMCS Command Structure
  - (3) Independant homeported 110' WPBs are assigned an EM1 squadron homeported 110' WPBS are assigned an EM3.
- (d) 3-MK3's for MATTed 210B.
- (e) 1-EM3 for MATTed 210B.
- (f) 3-FN's for MATTed 210B.
- (g) Includes 2-FNEM billets.
- (h) Includes 1-FNEM billet.
- (i) 3-FN's for a MATTed 210A.
- (j) May be assigned 1-LTJG in lieu of 1-BMCM.
- (k) BM1 may be assigned in lieu of BM2.
- (l) BM2 may be assigned in lieu of QM2.
- (m) Units without readily available electrical shore support may be assigned an EM1 in lieu of EM3.
- (n) The enlisted personnel allowance for various 378's may differ due to the number of striker billets assigned, i.e. FNEM, FNDC, SNYN etc.
- (o) Ninth District units delete 1-LTJG.
- (p) Fourteenth and Seventeenth District units add 1-OM3.
- (q) Ninth District units delete 1-GM2.
- (r) Fourteenth and Seventeenth District units add 1-SN.
- (s) Units in isolated support locations may substitute 1-ET1 for 1-ET2.
- (t) Fourteenth and Seventeenth District units delete 1-ET2 and add 1-ET1 and 1-ET3.
- (u) Fourteenth and Seventeenth District units add 2-FNMK's and 1-FNEM.
- (v) Fourteenth and Seventeenth District units add 1-RM1, 1-RM2 and 1-RM3.
- (w) May substitute 1-SK2 in lieu of 1-YN2.
- (x) Units not under a Group Office add 1-YN3.
- (y) Fourteenth and Seventeenth District units delete 1-HS3 and add 1-HS1.

## 2.F. Air Stations.

1. Introduction. Air stations are land-based units designed and equipped to fulfill Coast Guard missions by operating assigned aircraft. In order to accomplish assigned missions, it is necessary to produce flight hours and is often necessary to maintain an alert posture with one or more aircraft types assigned to a unit. The operational nature of aircraft operations frequently requires the deployment of aircraft to perform work away from the unit. Coincidental with the operation of assigned aircraft is the need to perform unit level maintenance (inspecting; servicing; lubricating; adjusting and replacing parts, minor assemblies and subassemblies; calibrating; repairing or replacing damaged or unserviceable parts, components, or assemblies; modification of material; emergency manufacture of unavailable parts; and providing technical assistance).
- a. Standards Development. The techniques used in this section make extensive use of existing work reporting and management information systems. These systems include the Personnel Management Information System (PMIS), the Aviation Computerized Maintenance System (CMS) and the Abstract of Operations-Aircraft report. All Coast Guard air stations make regular reports to these systems. Other staffing criteria, such as duty section and deployment crew sizes, are based on governing directives, various work surveys, and professional estimates. Figures for aircrew flight hour limitations are taken from the Coast Guard Air Operations Manual (COMDTINST M3710.1(series)).
- b. Procedures. The staffing of an air station is mainly driven by two elements: the crews required to maintain an alert posture and the personnel required to perform the measured work at the unit. Measured work for aviation personnel includes the operation of, and the maintenance of, the assigned aircraft. In order to determine the staffing of a unit, calculations must be performed to determine both staffing levels. The staffing of the unit is that which is the greater of staffing to maintain readiness or staffing to perform work.

2.F.1.b. (Cont'd)



2. Staffing Calculations.

- a. Standard Workweeks. Aviation personnel at air stations are duty standers with 68-hour workweeks or day workers with 40-hour workweeks. Staffing is predicated on aviation duty-standing personnel standing 1-in-4 duty. Figure 2-18 below represents an example of the average applicable allowances and the calculated hours available for duty and work for aviation personnel and will be used for calculation purposes throughout this section (see Chapter 1 for the source of these figures).

Example Average Personnel Availability Times

ENTERING PERSONNEL DATA:

AVERAGE ALLOWANCES PER YEAR (WORK AND/OR DUTY DAYS)				AVERAGE ALLOWANCES PER DAY (WORK HOURS) SERVICE		
LEAVE	HOLIDAYS	TAD	WEEKENDS	BREAKS	DIVERSIONS	TRAINING
AVIATORS:						
25	10	18*	104	0.5	0.75	0.37
AVIATION ENLISTED:						
25	10	10**	104	0.5	0.75	0.37

AVAILABILITY CALCULATION:

DAYS AVAILABLE FOR DUTY PER YEAR	TIME AVAILABLE FOR WORK/YEAR	
365 - 25 DAYS LV - DAYS TAD	365.25 - LV - HOLIDAYS - TAD	
	- WEEKENDS X 6.37 Hrs/Day	
	DAYS	HOURS
AVIATORS:		
322: 1-IN-4 DUTY = 80.5 DUTY DAY	208.25	1327
AVIATION ENLISTED:		
330: 1-IN-4 DUTY = 82.5 DUTY DAY	216.25	1378

Figure 2-18



2.F.2.a. (Cont'd)

- \* Survey results used in example. Adjust for specific unit history.
- \*\* Servicewide average figures used in example. Adjust for specific unit history.

b. Duty Requirements.

- (1) Duty Section. In order to calculate the Duty Section size (DSS) of a unit, use Figure 2-19 which presents standards for various readiness postures and aircraft types. A duty section member is a person required to be on board the unit twenty-four hours per day. Note that this table assumes that the duty section will cover all watches such as telephone, radio, security, etc.

Duty Section Size

	SINGLE AIRCRAFT READINESS (1-BO)				DUTY AIRCRAFT READINESS (2-BO)				MULTIPLE TYPE AIRCRAFT DUAL READINESS (2-BO)				
	H52/ H65	H3	HU-25	C130	H52/ H65	H3	HU-25	C130	H52/ H3	H52/ C130	SRR Hu-25	H3/ C130	MRR HU-2
OFFICERS:													
Aviators	2	2	2	2	4	4	4	4	4	4	4	4	4
ODO				1	1	1	1	1	1	1	1	1	1
DSS	2	2	2	2	5	5	5	5	5	5	5	5	5
AVIATION ENLISTED:													
Aircrew	1	2	3	5	2	4	6	10	3	6	4	7	4
Line Crew	3	2	3	3	3	3	3	3	3	3	3	3	3
ODO	1	1	1	1									
Watch Capt	1	1	1	1	1	1	1	1	1	1	1	1	1
DSS	6	6	8	10	6	8	10	14	7	10	8	11	9
Rescue Swimmer													
	1	1	0	0	1	1	0	0	1	1	1	1	1

Figure 2-19

Example: Determine minimum air station staffing needed to maintain a single readiness posture with the HH-52A.

From Figure 2-18:

Duty days per aviator per year =  
 365 days/year - 25 days leave - 18 days  
 TAD = 322 days per year  
 322 days available/year divided by 4  
 (1-in-4 duty) = 80.5 duty days/year

Duty days per aviation enlisted per year is shown in Figure 2-18 as 82.5 duty days/year

2.F.2.b.(1) (Cont'd)

Staffing Calculations:

$$\text{Persons Needed} = \frac{\text{DSS times 365 days/year}}{\text{Duty days/year/person}}$$

$$\text{Aviators Needed} = \frac{2 \times 365}{80.5} = 9$$

$$\text{Enlisted Needed} = \frac{6 \times 365}{82.5} = 27$$

To these totals would be added the non-duty standing command and control allowance for aviators (Commanding Officer, Executive Officer and Operations Officer) and aviation enlisted personnel described in Figure 2-26 below.

These calculations represent a mathematical solution only in the most favorable of conditions. The results are to be used only as an entering argument when calculating personnel requirements to stand duty.

- (2) Additions to Duty Standing Allowance Due to Deployments. To adjust the number of billets provided for duty standing for the workload imposed by the deployment of aircraft; the number of additional billets required to absorb deployment requirements is calculated by using deployment workload and deployment crew size.

Deployment times are reported in the Abstract of Operations-Aircraft report by the following categories:

Days Away From Home Stations (DAFS) - This is the total number of days (rounded to the nearest whole day) which a unit's aircraft are away on missions for continuous periods of 12 hours or more.

Shipboard Operating Hours (SBOH) - This is the total number of hours which a unit's aircraft are involved in shipboard operations.

The average deployment crew size (DCS) for aircraft types are as follows:

### Average Deployment Crew Size (DCS)

	<u>HH-52A</u>	<u>HH-65A</u>	<u>HH-3F</u>	<u>HC-130</u>	<u>HU-25</u>	<u>E-2C</u>
CG-FO						2
Aviators	2	2	2	2	2	3
Aviation Enlisted:						
Shipboard	3*	3	NA	NA		
Other	1	1	3	6	3	6
FLT Tech						1

\* Note: This number may be increased for polar operations deployments, Alaskan Patrol requirements, or for unique missions.

Figure 2-20

Calculation: The following equation is used to calculate the number of billets needed to restore duty standing to one-in-four after incorporating the requirements for deployments. Note the use of different deployment crew sizes for the HH-52A depending upon whether or not the deployment is aboard ship.

$$\frac{\text{DSS}(365) + \text{DCS}(\text{DAFS}) + \text{DCS}(\text{SBOH}/24)}{\text{Duty Days/Person/Year}} = \frac{\text{Total}}{\text{Dutystanders}}$$

Where:	DSS	Duty Section Size
	DCS	Deployment Crew Size
	DAFS	Days Away From Home Station Per Year
	SBOH	Shipboard Operating Hours Per Year
	365	Days Per Year
	24	Hours Per Day

Note: When calculating based upon historical data, the average of at least three years should be used to avoid the results being driven by short-term anomalies. When projecting workloads, use the planning factor in these calculations.

#### c. Flight Crew Calculations.

- (1) Standard Flight Hours. There is a programmed utilization standard for each aircraft type. The unit allowance of aircraft is established through an Operating Facility Change Order which defines the number of each aircraft type assigned to the units and the programmed utilization rates. This standard utilization rate may be increased in specific cases through augmentation when

- 2.F.2.c.(1) (Cont'd) additional funding and personnel resources are provided to a unit to permit higher-than-standard utilization. Resources may also be decreased in a similar manner. Parenthetically, a unit may be assigned an additional aircraft as an operational spare; when this occurs, it is assumed to be a temporary situation and no increase in flight hours, personnel or funding result. Standard utilization rates are:

Standard Aircraft Utilization Rates

	<u>HH-52A</u>	<u>HH-657</u>	<u>HH-3F</u>	<u>HC-130</u>	<u>HU-25</u>	<u>E-2C</u>
Hours/Year/Acft	650	800	700	800	800	1000

- (2) Average Sortie Duration. For the purposes of establishing staffing standards, it is assumed that each sortie is the average duration calculated from the Abstract of Operations-Aircraft Report. Sortie duration is used to calculate elements of staffing in the sections which follow. The average sortie duration for each aircraft type is:

Average Sortie Durations

	<u>HH-52A</u>	<u>HH-65A</u>	<u>HH-3F</u>	<u>HU-25</u>	<u>HC-130</u>	<u>E-2C</u>
Flt hours/Sortie	1.5	1.5	1.8	2.5	3.1	3.25

- (3) Aviators. The minimum numbers of pilots required for Coast Guard aircraft are stated in the Air Operational Manual as:

Aviator Work Hours Per Flight Hour

	<u>HH-52A</u>	<u>HH-3F</u>	<u>HC-130</u>
Day VFR	1	2	2
Night/IFR	2	2	2
Historical Average 1.7*		2	2

- \* From surveys, it has been established that there is an average of 1.7 aviator flight hours per aircraft flight hour for the HH-52A.

- (4) Enlisted Aircrew. The Coast Guard Air Operations Manual specifies minimum aircrew sizes for each aircraft type. The actual aircrew size exceeds this number due to requirements (extra scanners, personnel to handle cargo, trainees, etc.). The average crew size, as determined from surveys is:

Aircrew Work Hours Per Flight Hour

<u>HH-52A</u>	<u>HH-3F</u>	<u>HC-130</u>
1.2	2.5	5.7

d. Work Requirements.

(1) Aviators.

- (a) Concept. Aviators are Coast Guard line officers. As such, aviators perform collateral duties involved with managing the unit and its resources as assigned by the Commanding Officer in addition to flight duties. Nevertheless, the number of billets for aviators at air stations is calculated based upon the performance of flight-related duties and duty standing. The measured work output of aviators is flight hours produced, days of duty stood and days deployed or away from home station. Billets to perform these functions are augmented by command and control billets. The number of aviator billets needed to fulfill flight time workload requirements are based upon flight hours programmed for a unit's aircraft, the pilot requirements for those aircraft, the expected number of aviator flight hours produced by an aviator, and the promulgated flight hour limitations on personnel. Coast Guard Flight officers are assigned to Coast Guard Air Station St. Augustine and perform a specialty unique to the B-26 Aircraft assigned to this unit.
- (b) Command and Control. All air stations will be authorized three aviator billets in addition to those calculated for duty standing requirement, one each for Commanding Officer, Executive Officer and Operations Officer. Persons filling command and control billets are expected to fill in as duty standers for short periods of time to meet peak workloads or accommodate the absence of other personnel due to deployments, TAD, etc. For the purpose of determining staffing for aviators, the Commanding Officer and Executive Officer each are presumed to fly two sorties per week when they are aboard the unit.

2.F.2.d.(1)(b) (Cont'd) (From Figure 2-18, 208 work days per year divided by five days per week equals 42 weeks; 42 weeks times two sorties per week equals 84 sorties per year.) For the purposes of providing sufficient aviators to fly assigned aircraft the desired number of flight hours, at units operating only helicopters of one type (HH-52A-only or HH-3F- only), the Operations Officer is presumed to fly the same number of flight hours per year as the assigned duty-standing aviators. At all others, the Operations Officer is presumed to fly two sorties per week. In most instances, the Aeronautical Engineering Officer fills a duty-standing billet. An Aeronautical Engineering Officer will be assigned to a command and control (non-duty standing) status when two or more types of aircraft are assigned to an air station, when the numbers of enlisted aviation billets exceed eighty, or when dual B-0 is maintained. Assistant Aeronautical Engineering Officers, when assigned or designated, are duty standing aviators. When assigned to a unit operating only helicopters of one type, the Aeronautical Engineering Officer is also presumed to fly the same number of hours as the assigned duty standing aviators. At all others, the Aeronautical Engineering Officer who fills a command and control billet is presumed to fly two sorties per week.

The following tabulates the standard command and control assignments at air stations:

2.F.2.d. (1) (b) (Cont'd)

Standard Aviator Assignments for Command and Control

SINGLE AIRCRAFT and READINESS			DUAL AIRCRAFT TYPE or DUAL READINESS		AVIATION ENL. WORK FORCE > 80	
H65/ H52	H3	C130	H65/ H52	All Others		E-2C
COMMAND AND CONTROL (Non-Dutystanders)						
Commanding Officer 1	1	1	1	1		1
Executive Officer 1	1	1	1	1	1	1
Operations Officer 1	1	1	1*	1*	1*	1
Aeronautical Engineer			1*	1*	1*	
DUTYSTANDING OFFICERS						
Aeronautical Engineer 1	1	1				
Asst. Aero Engineer**	1	1	1	1	1	
Fl. Safety Officer 1	1	1	1	1	1	

Figure 2-21

\*Note: When more than one type aircraft assigned or dual readiness posture or more than 80 aviation enlisted personnel assigned, Operations Officer and Aeronautical Engineer do not fly same number of flight hours as dutystanding aviators; they fly two sorties per week.

\*\*Note: After two aircraft types, additional Assistant Aeronautical Engineer designated for each additional aircraft type assigned.

- (c) Aviator flight hour requirements for the aircraft assigned to a unit are calculated by multiplying the number of each type of aircraft assigned by the number of flight hours desired from that aircraft by the number of aviator work hours per aircraft flight hour. This is the aviator flight hour workload.

Example: An HH-52A unit operates three helicopters

2.F.2.d. (1) (c) (Cont'd)

Each HH-52A programmed to fly 650 hours per year

Each flight hour generates an average requirement for 1.7 aviator work hours

Aviator work hours required =  
 $650 \times 3 \times 1.7 = 3315 \text{ hours}$

Annual, monthly and weekly maximum flight hour limitations which are published in the Air Operations Manual notwithstanding, there are practical limitations to the number of flight hours which the aviators assigned for duty standing can provide. The practical limit is defined by such factors as the number of days which an aviator is present at the unit, the number of flights the aviator is normally scheduled for during any given day, the fact aviators cannot fly when medically grounded, constraints due to weather, aircraft non-availability due to mechanical/supply problems, and the fact that aircraft may be deployed and not available to others for flight.

- (d) For the purposes of staffing calculations, the planning factor that each aviator not specifically assigned as the Commanding Officer or Executive Officer will fly one sortie of average duration on 80% of the days which the aviator is available for work (from Figure 2-18) is used. An additional planning factor is that each assigned dutystanding aviator will fly at least 25 hours per month on the average in order to maintain operational proficiency. Because the aviator is on leave for the equivalent of one month per year, the expected minimum annual production of flight hours is 275 (25 times 11 months). It is recognized that the amount of flight time which an aviator produces in any month varies, but the following figures are the minimum number to be used for the purpose of staffing calculations:

Days available for work per year: 208  
Number of sorties per year:  $80\% \times 208 = 166$   
Planned aviator flight hour production:  
 $166 \text{ sorties} \times \text{average sortie duration}$   
(minimum 275)



2.F.2.d.(1) (d) (Cont'd)

Minimum Aviator Flight Hour Production

	<u>HH-52A</u>	<u>HH-65A</u>	<u>HH-3F</u>	<u>HC-130</u>	<u>HU-25</u>	<u>E-2C</u>
Flight Hours/year	275	275	299	515	415	540

- (e) Using the figures above, the number of aviators needed to provide programmed flight hours can be calculated by dividing required pilots hours programmed flight hours times the number of pilots required) by the expected minimum annual aviator flight hour production. The following example shows how this is calculated:

Example: Unit operates three HH-3F  
HH-3Fs fly 700 hours per year  
Two aviator work hours per flight hour  
CO/XO absorb 84 sorties/year x 1.8  
hours/sortie = 151 flight hours.

Total aviator hours required per year  
700 hrs/yr x 2 pilots/hr x 3 aircraft  
4200 pilot hours

Each HH-3F aviator produces 299 pilot hours per year.  
4200 pilot hours required minus CO/XO flight hours

(2 x 151) = 3898 pilot hours  
3898 pilots hours required divided by 299  
aviator hours/aviator equals 13.0 aviator  
required

Note that this Figure includes the Operations Officer and Aeronautical Engineering Officer but not the Commanding Officer or Executive officer.

Note that this Figure is not the Figure for the duty-standing allowance; that allowance was calculated in paragraph 2.b above.

When calculating aviator requirements, the flight hour contributions by the command and control officers such as Commanding Officer, Executive Officer, Operations Officer and Aeronautical Engineering Officer must be subtracted from the required pilot hours as appropriate.

2.F.2.d.(1)(e) (Cont'd) This procedure can be used to calculate any increase in aviators needed for flight hour augmentation by calculating increased number of aviator hours needed to produce increased number of flight hours.

- (2) Aviation Warrant Officers. All air stations will be authorized one aviation chief warrant officer (CWO) billet to provide aviation engineering maintenance supervision and technical expertise and to assist the Aeronautical Engineering Officer. Stations with two or more aircraft types may be assigned additional aviation CWO billets. Warrant Officers normally are either AVIs or ELCs, depending upon the needs of the unit.)
- (3) Aviation Enlisted Personnel. Work requirements for aviation enlisted personnel concern flight hour requirements, preventive and corrective maintenance of aircraft and ground support equipment (GSE), engineering support, and supervision. Flight hour requirements are established by programmed flight hours and enlisted air-crew sizes. Preventive and corrective maintenance are primarily measured by work reported through the Computerized Maintenance System (CMS). Work required for supervision and preventive and corrective maintenance NOT covered by CMS was established through work surveys. Work required to maintain GSE was adapted from Navy standards. Standard values for these work factors are:
- (a) Flight Crew Make Ready (FCMR) hours is time required to prepare for flight, start aircraft, and taxi to takeoff position before flight time commences. It also is the time required to secure from flight and return to other duties after the end of a flight. This Figure is multiplied by the average number of sorties per year for the aircraft type to achieve programmed flight hours and the average aircrew size to determine total work requirements for this category.

<u>FCMR Hours Per Aircrewman Per Sortie</u>		
<u>HH-52A</u>	<u>HH-3F</u>	<u>HC-130</u>
1.3	1.8	2.5

- 2.F.2.d.(3)(b) Aircraft Pre/Thru/Post Flight (APF) number of hours required to perform required pre-flight, throughflight, and postflight inspections. These hours are reported through CMS and are calculated based upon the number of aircraft of each type assigned to the unit.

APF Work Hours Per Aircraft

	<u>HH-52A</u>	<u>H-65</u>	<u>HH-3F</u>	<u>HC-130</u>
Work Hours				
Per Year	803	803	1679	1752
Per Day	2.2	2.2	4.6	4.8

- (c) Line Crew Duty (LCD) includes work for cleaning aircraft, corrosion control, fueling/defueling, towing and taxing aircraft. Standard values for this unction for salt water and fresh water operating environments are:

LCD Work Hours Per Aircraft

	<u>HH-52A</u>	<u>HH-3F</u>	<u>HC-130</u>
Work Hours			
Salt Water			
Per Year	2336	2738	3833
Per Day	6.4	7.5	10.5
Fresh Water			
Per Year	1679	NA	3103
Per Day	4.6		8.5

- (d) Aircraft Maintenance (AM) includes all work expended for scheduled and unscheduled preventive and corrective maintenance of aircraft reported through the CMS and adjusted to include work on aircraft not reported through CMS such as make ready and put away time and tasks which have no associated work card. These times are broken down into two parts; that work which is driven by the number of airframes assigned to the unit (calendar inspections) and that which is driven by the number of flight hours which the aircraft flies (including "On Condition" work code items). In addition, figures are provided for shop maintenance work hours (SM) and the performance of Quality Assurance (QA) checks which are also a function of the number of airframes attached and the number of flight hours delivered.

# Aircraft Maintenance Work

	<u>HH-52A</u>	<u>HH-3F</u>	<u>HC-130</u>
Work Hours Per AIRFRAME per year			
AM	1553	3587	5538
SM	250	631	1799
QA	<u>142</u>	<u>341</u>	<u>527</u>
Total	1945	4559	7864
Work Hours Per FLIGHT HOUR			
AM	5.87	7.40	5.37
SM	0.95	1.30	1.74
QA	<u>0.54</u>	<u>0.70</u>	<u>0.51</u>
Total	7.36	9.40	7.62

For example, the interpretation of this Figure that, for each HC-130 ASSIGNED, 7864 hours work is generated; for each hour it is flown, 7.62 additional work hours are generated.

Figure 2-22

- (e) Standard Enlisted Work Hours for measured work for each aircraft type are shown in Figure 2-23. Total workhours required for aircraft operation and maintenance can be calculated by multiplying the first column (Annual Work Hours Per Aircraft) by the number of aircraft of each type assigned and add the value of the work hours driven by the number of aircraft flight hours (second column-Work Per Flight Hour) times the number of flight hours to be delivered by each aircraft. A description of the 15% allowance for supervision is provided in sub-paragraph (i) below.

Total Annual Enlisted Work Hours For Aircraft Allowance

	Annual Work Hours Per Aircraft	Work Hours Per Flight Hour
HH-52A		
Flight Crew Make Ready (FCMR x Average Crew Size)		1.04
Average Sortie Duration		
Flight Crew Time		1.20
Pre/Post/Thru Flight Inspections	803	
Line Crew Duty		
Salt Water Environment	2336 or	
Fresh Water Environment	1679	
Aircraft Maintenance	1945	7.36
Supervision		
(0.15 x (Aircraft Maintenance + Line Crew Duty Hours))		
Salt Water Environment	6 or	1.10
Fresh Water Environment	<u>544</u>	1.10
TOTAL		
Salt Water Environment	5726 or	10.70
Fresh Water Environment	4971	10.70
HH-3F		
Flight Crew Make Ready		2.50
Flight Crew Time		2.50
Pre/Post/Thru Flight Inspections	1679	
Line Crew Duty		
Salt Water Environment	2738	
Aircraft Maintenance	4559	9.40
Supervision		
(0.15 x (Aircraft Maintenance + Line Crew Duty Hours))		
Salt Water Environment	<u>1095</u>	<u>1.41</u>
TOTAL		
Salt Water Environment	10071	15.81
HC-130		
Flight Crew Make Ready		4.66
Flight Crew Time		5.70
Pre/Post/Thru Flight Inspections	1752	
Line Crew Duty		
Salt Water Environment	3833 or	
Fresh Water Environment	3103	
Aircraft Maintenance	7864	7.62
Supervision		

Figure 2-23

Total Annual Enlisted Work Hours For Aircraft Allowance

	<u>Annual Work Hours Per Aircraft</u>	<u>Work Hours Per Flight Hour</u>
--	---	---------------------------------------

(0.15 x (Aircraft Maintenance + Line Crew Duty Hours))

Salt Water Environment	1755 or	1.14
Fresh Water Environment	<u>1645</u>	<u>1.14</u>
TOTAL		

Salt Water Environment	15204 or	19.12
Fresh Water Environment	14364	19.12

Figure 2-23 (Cont'd)

- (f) Ground Support Equipment Maintenance. Ground support equipment (GSE) is the equipment used during aircraft maintenance and aircraft handling such as special tools, racks, stands, tow tractors, auxiliary power units, etc. Staffing requirements for the maintenance of ground support equipment was derived from U.S. Navy work in this area which developed the standard number of work hours per year for each piece of equipment. The standard workhours to be used are based upon:

The Aeronautical Ground Support Equipment allowance for each type of aircraft listed in the Aircraft Material Stocking List for up to four aircraft of any one type, augmented by

The normal allowance of mechanized support equipment shown in the table below, and by

The normal allowance of check or work stands found at a unit operating that aircraft type.

Standard Equipment Allowances  
(in addition to Aircraft Material Stocking List)

	<u>HH-52A</u>	<u>HH-3F</u>	<u>HC-130</u>
Check/Work Stan.ds	8	10	10
Tow Tractors	2 small	2 med	2 lrg
Hydraulic Jenny	1	1	1
Hobart G.P.U.	1	1	1
Hangar Sweeper/Scrubber	1	1	1
Forklift	1 utility	1 utility	1 C-130

2.F.2.d.(3)(f) (Cont'd) This allowance of ground support equipment generates the requirements for the following work hours for air stations operating up to four aircraft of any one type:

Standard GSE Maintenance Workhours

<u>HH-52A</u>	<u>HH-3F</u>	<u>HC-130</u>
468	590	768

Figure 2-24

Units which operate more than one aircraft type may add the values in Figure 2-24 to determine their total work hour requirements. Units which operate more than four aircraft of any one type or which have more than the standard allowance of GSE may use the following to estimate their additional work-hour requirements:

- (1) All non-motorized racks, stands, carts, jacks, towbars, trucks and dollys 12 hours/year each
- (2) Ramp sweepers, hangar deck scrubbers/sweepers, Herman Nelson heaters, portable floodlights, vacu-blast units, air compressors, electric-driven hoists (including overhead), small tow tractors, mini-mules, engine wash carts, and mobile motor generator units 24 hours/year each
- (3) Small forklifts, medium and large tow tractors, hydraulic jennys, ground air conditioning units, nitrogen service carts, oxygen service carts, ramp power systems, hydraulic-driven hoists 36 hours/year each
- (4) Engine test cells, C-130 forklift 120 hours/year each
- (5) 2000 gallon refueler 170 hours/year each
- (6) 5000 gallon refueler 220 hours/year each

2.F.2.d.(3)(f) (Cont'd) Note: Some of these items may be maintained by general service personnel in the public works department; if so, this workload should not be included for aviation enlisted personnel.

- (g) Standard Staffing Based Upon Measurable Work. This value may be calculated for units which do not have deployment requirements or unique ground support equipment allowances by totalling the work hours defined in Figure 2-20 (Annual Work Hours Per Aircraft times the number of aircraft of each type plus Work Hours Per Flight Hour times the number of flight hours for each aircraft type) and adding the work hours for ground support equipment shown in Figure 2-24. The results are shown below:

Staffing Based Upon Measurable Work

		Number of Aircraft		
		<u>2</u>	<u>3</u>	<u>4</u>
<u>HH-52A</u>	(650 flight hours/year/aircraft)			
	Salt Water Environment	18.7	27.9	37.1
	Fresh Water Environment	17.6	26.3	34.9
<u>HH-3F</u>	(700 flight hours/year/aircraft)			
	Salt Water Environment	31.1	46.4	61.8
<u>HC-130</u>	(800 flight hours/year/aircraft)			
	Salt Water Environment	44.8	67.0	89.0
	Fresh Water Environment	43.5	65.1	86.6

Figure 2-25

Using the figures from Figure 2-23, the incremental staffing increase needed to augment the flight hour output for any aircraft type may also be calculated. In all cases, units which can justify and document their measured work requirements which are greater than any of the described categories may use their actual requirements as a basis for requests for increases in staffing. They should also consider if their requirements in other areas are lower than the established standard.



2.F.2.d.(3)(h) Adjustments to Aviation Enlisted Work force Due to Deployments. The number of hours of work (1378) for aviation enlisted personnel (Figure 2-18) was calculated using a service-wide average of ten working days per year lost per person due to individual TAD (that not associated with aircraft deployments). The actual experience of a particular unit may differ, so a means is provided to adjust staffing to absorb higher rates. An individual contributes 6.37 hours of work per day present at the unit (1378 hours available for work per year divided by 216.25 days available for work per year--Figure 2-18), so each day of TAD by an individual takes a 6.37 workhour contribution away from the unit. Do not include TAD during deployments with aircraft in this Figure; it is calculated below. Fractional increases in staffing due to individual TAD may be calculated as:

- (1) No staff increase until each person has taken an average of ten days TAD; once this has occurred, then

$$\text{Total Days TAD} \times \frac{6.37}{1378} = \text{Enlisted Staff Increase}$$

- (2) Days deployed with an aircraft or days away from home station are treated differently. For example, consider the case of the HH-52A helicopter deployed aboard ship. One helicopter represents 6.4 hours of Line Crew Duty (LCD) per day and 2.2 hours of Aircraft Pre/ Thru/Post Flight (APF) time per day of work while the absence of the shipboard deployment crew of three aviation enlisted personnel takes 19.1 hours of work (3 x 6.37) away from the unit. The deployed aircrew performs the Line Crew and Aircraft Pre/Thru/Post Flight inspection work on the helicopter, so the net loss in work to the unit is 10.5 hours (19.1 minus 8.6) per day of shipboard deployment or days away from home station. The fractional increases in staffing due to aircraft deployments are calculated as:

$$\frac{\text{Days Deployed} ((\text{DCS} \times 6.37) - (\text{LCD} + \text{APF}))}{1378}$$

Enlisted Staff Increase

Where: DCS = Deployment Crew Size  
LCD = Line Crew Duty work/day  
APF = Aircraft Pre/Thru/Post Flight  
work per day  
1378 = Work hours/individual/year

- (3) Days deployed and/or days away from home station for an aircraft type may be obtained from the Abstract of Operations-Aircraft report. When performing calculations based upon historic data, at least a three-year- average should be used for both the days TAD for individuals and days deployed for aircraft in order to eliminate short-term anomalies. When projecting workloads, use the planning factor Figure in these calculations. These adjustments are applied to the figures in Figure 2-25. After adjustments are applied, the resulting staffing is rounded to the nearest whole billet.
- (i) Work Force Supervisors. This is an allowance of billets to perform the work of supervising the work of others. There are two components of this work: first-line supervisory work which is a function of other workloads (this was calculated in Figure 2-23) and supervisory billets provided for overall maintenance supervision.
- (1) The first-line supervision allowance which is a function of other workloads is a factor which was determined from various surveys. A standard allowance for supervision of 0.15 supervisor workhours per hour of work performed in line crew duties and aircraft maintenance is provided. This allowance provides for such functions as line crew supervisors and shop supervisors as well as such functions as instruction, personnel paperwork such as special requests, individual counselling, assigning performance marks, and other such activities performed by first-line supervisors. The billets in Figure 2-26 below are provided for overall supervision of aircraft maintenance and the personnel who perform it. In order to provide continuity, these billets are provided

2.F.2.d.(3)(i)(1) (Cont'd) in addition to billets required for duty standing, deployments, and other workloads.

Enlisted Work Force Supervisors

	HH-52A Unit	HH-3F Unit	HC-130 Unit	Combined Acft Types
Leading Chief/ Command Enlisted Advisor	1 E-8	1 E-8	1 E-8	1 E-9
Maintenance Supervisor	1 E-7	1 E-7	1 E-7	2 E-7

Figure 2-26

(j) Aircraft Maintenance Support. This is an allowance of billets to perform work which supports the maintenance-of-aircraft function. These figures were determined from air station work surveys covering these functions and from professional estimates.

Aircraft Maintenance support Billets

	HH-52A Unit	HH-3F Unit	HC-130 Unit	Combined Acft Types
Quality Assurance * Supervisor		1 E-6	1 E-6	1 E-7
Log Office	1 PO	1 PO	1 PO	2 PO
Aviation Supply	0.5 PO	1 PO	1 PO	2 PO
Tool Control/ Ready Issue	0.5 PO	1 PO	1 PO	2 PO

\* HH52A only included in QA factor in Figure 2-21

Figure 2-27

(k) Rating Distributions. The distribution of the aviation enlisted billets is derived from the analysis of the distribution of work hours reported through CMS reports. Because each aircraft type is different, each has the need for a different distribution of aviation enlisted ratings in order to provide the proper work force with the proper mix of

2.F.2.d.(3)(k) (Cont'd) skills. Note, however, that this distribution may be altered for the unique circumstances of the unit. The standard distribution is shown in Figure 2-27:

Distribution of Aviation Enlisted Ratings

Rating	<u>HH-52A</u>	<u>HH-3F</u>	<u>HC-130</u>
AD	38%	31%	26%
AE	16%	14%	13%
AM	24%	24%	27%
ASM	5%*	6%*	8%
AT	17%	25%	26%

Figure 2-28

\*Note: At least two ASMs will be at each unit to provide a quality assurance capability for their work.

- (1) Rate Distributions. The distribution of rates for assigned personnel at air stations is shown in Appendix A to this manual.
- (4) Unique Requirements. Units having unique requirements due to operational circumstances or operating environments or because their work force performs "non-standard" functions such as prime units, standardization units or units providing test cell support should quantify the work hours required by these differences and make their requirements known to their chain of command.
- (5) Non-Aviation Enlisted Personnel. Requirements for non-aviation enlisted billets at air stations fall under respective sections of this manual.
- (6) Staffing Standards for New Aircraft. The standards promulgated by this chapter do not address staffing for new aircraft entering the Coast Guard inventory (new HC-130s, HH-65A, HU-25A). These standards will be developed when sufficient operational experience and maintenance data have been collected and will be promulgated in future changes. In the interim, the following standards will be used:

2.F.2.d.(6) (Cont'd)

New HC-130s: Same staffing as developed above.

HH-65A: Same staffing as developed for HH-52A.

HU-25A: Same as previous standards for HU-16E/HC-131A set forth in Figure 2-16 below:

Interim Staffing Standards for HU-25A

Planning Factors: 800 hours per year utilization  
 2 aviator hours per aircraft flight hour  
 2 aviators per duty section  
 3 enlisted aircrew hours per flight hour 3 enlisted aircrewmen in the duty section average sortie duration is 2.5 hours  
 Enlisted Ratings

Number of Acft:	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>
AD	7	11	14	18	21
AE	4	5	7	9	10
AM	4	7	9	11	13
ASM	1	2	3	3	4
AT	<u>6</u>	<u>9</u>	<u>12</u>	<u>15</u>	<u>18</u>
Total	22	34	45	56	67

Figure 2-29

## 2.G. Stations.

1. Definition. A "Station" is a multi-mission Coast Guard shore facility designed to operate boats in support of designated missions. Stations are provided with boat and personnel allowances, facilities for vessel moorings and maintenance, station administration, berthing and messing. In order to accomplish assigned missions stations provide unit level training and equipment maintenance. Stations are responsible for their own internal supervision but receive support and services from a district office, group office, base, support center, air station or other host command.
2. Introduction. Station staffing standards provide a framework for determining personnel allowances appropriate to multi-mission tasking while conserving Coast Guard resources. The basic "ground rules" for the standards are indicated below. The standards are based on specific concepts of station operations and activities; however, nothing should be construed to constrain the operational commander from employing his resources as he or she deems appropriate to meet station responsibilities. The standards developed in this section apply to all stations. Factors that might alter the basic staffing, such as extreme climate, location, availability of support facilities, etc., must be fully justified and will be evaluated individually.
  - a. Facility Location. Stations are facilities of the Search and Rescue (SAR) system. Our goal is to locate stations such that assistance can be rendered within two hours of Coast Guard notification.
  - b. Boat Requirements. Boat type requirements are based on operational and environmental demands in the assigned area of responsibility. Multiple platforms may be required for (1) scheduled and unscheduled missions and (2) to ensure effective SAR mission performance. Inventories will not exceed what can be operationally justified.
  - c. Communications. Stations are a fundamental part of the SAR alerting network, maintaining a 24 hour telephone watch (not necessarily live) and limited VHF-FM channel 16 guard. Generally, stations are not required to maintain a 24 hour radio watch. To

2.G.2.c. (Cont'd) reduce station workload, VHF-FM High Sites have been installed in most areas to permit FM guard shift to the Group after normal working hours or periods of low activity.

d. Readiness. Boat readiness requirements are normally based on expected SAR demand determined through statistical analysis and queuing standards. Depending on missions assigned, the number of personnel and the rank/rate structure may change depending on what is required to support SAR readiness. Law enforcement requirements are based on potential/known activity in specific geographic areas. Single or multiple BRAVO 0 boat readiness tasks a station with an immediate, year-round, 24 hour per day response requirement. Partial BRAVO 0 readiness may be added to year-round requirements in order to meet fluctuations in SAR demand by season, day and time of day. In areas where winter SAR demand is extremely low, single BRAVO 0 readiness may be relaxed, but not beyond BRAVO 2, so that personnel can be placed in a recall status off station.

e. Command and Control.

- (1) CO/OINC's and XO/XPO's - operational billets not determined by readiness requirements. These personnel are responsible for efficient station management, training and maintenance programs, direct supervision and decision making. OIC's and XPO's are expected to perform coxswain duties both for training purposes and when a particular mission requires the greatest level of experience.
- (2) OOD - specific OOD billets will not normally be provided. Duty section coxswains will normally perform these functions. When the duty boat crew is underway the functions, if required, may be assumed by the group or station supervisory personnel (CO/OIC/XO/XPO).
- (3) EO/EPO - The maintenance levels at stations with multiple BRAVO 0 readiness normally requires a dedicated EPO. Additional criteria such as the number and type of boats assigned, facility engineering and special missions may be considered.

- 2.G.2.f. Workload Scheduling. Flexible work/liberty routines must be employed to perform planned missions (operations, training, logistics, etc.) by non-duty section personnel. Duty section crew mission time must be conserved for unplanned or demand missions because of fatigue standards.
- g. Station Security. Security watches particularly after workhours are unnecessary under most circumstances because (1) adequate vessel security is provided in the quality of design and construction of Coast Guard boats and (2) fire security is provided by smoke/fire detectors. Station personnel are not normally trained in fighting compartment fires, and are therefore only expected to combat minor station fires. Local fire departments will normally be relied upon to provide general fire fighting capabilities.
3. Dutystanding Positions. The number and types of boatcrew positions for each boat type is based on the tasks and qualifications required to operate the boat. Position requirements for specific Coast Guard boats are shown in Figure 2-30. The communications position is a one person watch to support station communications. For staffing purposes, coxswain (BM) and engineer (MK/FN) positions are calculated individually but the boatcrewmen (SN) and communications watch (SN) positions are calculated together as one group.



## BOAT CREW POSITIONS

<u>Boat</u>	<u>Coxswain</u>	<u>Engineer</u>	<u>Boatcrewmen</u>
52' MLB	1	1	2
44' MLB	1	1	2
ANB	1	1	2
BU	1	1	2
BUSL	1	1	2
41' UTB	1	1	1
41' UTB (High Threat)	1	1 (Note 1)	2
30' UTM	1	1	1
30' SRB	1	1	1
32' PWB	1	1	1
21' TANB	1	1	1
NONSTANDARD BOATS	1	1 (Note 2)	0

NOTES: (1) Designated Boarding Officer

(2) Nonstandard boats, normally 25 ft or less, have a two person crew unless otherwise specified.

See Exhibit 2-5 for the standard distribution of billets for each position.

Figure 2-30

4. Staffing Requirements. Station staffing standard levels are predicated upon the required number of dutystanding positions on a one-in-four duty standing rotation. Search and Rescue Detachments (SARDETs), sub-units, and river patrols are staffed as a part of the unit from which they operate. Stations are not staffed separately for Officer of the Day (OOD) or security watch positions.
5. Availability Time. Chapter 1 establishes the methodology for staffing Coast Guard units and rating determinations. The number of billets necessary to support a particular position is based on the number of hours per year each watchstander is available to fill the position.
6. Staffing Calculation Sequence. The major assumptions and entering arguments for station staffing calculations are: boat readiness requirements (as stated in the district OPLAN), crew requirements of the largest boat assigned, a 68 hour workweek and a one-in-four duty rotation.

2.G.6.(Cont'd) Using these criteria, the standard staffing model allows for identification of: dutystanding, special mission, support, and command and control resources. The calculations to determine billet needs in each module must be Figured separately then added together, combining fractional portions. Figure 2-31 is a flow chart describing the process.

DUTYSTANDERS

Readiness Hours Per Position / Duty Availability Per Billet. Use readiness posture from District OPLAN and duty availability from Section D of Chapter 1. Output: total dutystanding billets.

SPECIAL MISSION REQUIREMENTS

Determined by methodology described in particular sections of Staffing Standards Manual and in Figure 2-19 of this section i.e., for ATON staffing use section B. Output: billets needed to perform additional missions.

SUPPORT REQUIREMENTS

Determined by methodology described in particular sections of Staffing Standards Manual i.e., housing billets from Chapter 4, Section I. SS billets are summarized in Figure 2-32. Output: support billets.

COMMAND AND CONTROL

Predetermined based on various factors; See Figure 2-20 - exceptions must be justified. Figure 2-32 is a pre-computed summary. Output: command and control billets.

Figure 2-31

Command and Control, Subsistence Specialist and Messcook  
Determinations

DS + SM + SUPT-(SS+MC)	CO	LTJG	CWO	BMC	BM1	MKC	SS	MC
12-21	0	0	0	X	X	0	1	0
22	0	0	0	X	X	0	1	1
23	0	0	0	X	X	0	1	1
24-29	0	0	0	X	X	0	2	1
30-33	0	0	X	X	0	0	2	1
34-36	0	0	X	X	0	X	2	1
37	0	0	X	X	0	X	3	1
38-45	LT	0	0	X	0	X	3	1
46	LT	0	0	X	0	X	3	2
47-51	LT	0	X	X	0	X	3	2
52-55	LCDR	X	X	X	0	X	3	2
56-64	LCDR	X	X	X	0	X	4	2
65-70	LCDR	X	X	X	0	X	4	3

NOTE: 1. In order to justify the command and control billet determinations above with Figure 2-35 recognize that senior command and control personnel positions provide supervision to other staff, operational and support billets. For example, identify a command and control billet above; add command and control billets to the right of that billet with the DS, SM, SUPT, SS and MC billets at that level. This is the entering argument for Figure 2-35 and will yield the same command and control billets as shown in the above Figure.

2. This table provides pre-calculated billet determinations for the standard station. It cannot be applied where there is no established dining facility or if the dining facility is staffed to support tenant commands. In these cases allowances must be figured individually from Chapter 4 and from Figure 2-35 of this chapter.

3. Enter table on left with the total number of dutystanding billets (DS), special mission billets (SM), and support billets (SUPT) less subsistence specialists (SS) and messcooks (MC).

4. Iterative calculating is included. Distribution of SS billets will be in accordance with Chapter 4, Section G.

Figure 2-32

2.G.7. METHODOLOGY.

- a. Dutystanders-- are normally the boat crew and communications watchstander positions. SARDETS and sub-units are included in this category. Additional positions must be justified.
- (1) Availability time-- Dutystander billets are program-med to work a 68 hour-5 day work week with a duty day every fourth day. The length of the workweek and the duty rotation are set by the Commandant, and are provided for in Section D, Chapter 1. Availability times in Section D of Chapter 1 take these parameters into account. Changes in the length of the workweek or duty rotation will effect duty availability time. Based on calculations in Chapter 1, a dutystanding billet (68 hour workweek) is available for duty 36.52 hours a week or 1898 hours a year. SARDET and sub-unit boatcrews are considered to be dutystanders and as such are also available 1898 hours per year.
- (2) Duty requirements-- Each full year Bravo 0 (B0) boat requires a duty crew be available 24 hours a day for 365.25 days or 8766 duty hours per year per dutystanding position. Multiple readiness requirements or portions thereof increase manning proportionately. For example, 2-41 'UTB B0 response requirements would calculate to 17,532 hours of coxswain duty, 17,532 hours of engineer duty, and 17,532 hours of boatcrewmen duty. Only one communication watchstander is allowed per station, regardless of total response requirements. Units with RMs will be staffed in accordance with Chapter 28. For calculation purposes, B2 is the same as B0. Calculations for SARDETS, sub-units, or river patrols are based on the boat assigned and response requirements. Where units have an ice season, and maintain a B0 posture, staffing for the ice season will be based on the largest ice boat.
- (3) Calculations -- The basic algorithm to determine the number of billets necessary to staff a position is:

$$\frac{\text{hours of duty required per position}}{\text{duty hours available per watchstander per year}}$$

Figure 2-33 provides a ready reference chart of fractional billet requirements for common readiness postures.

2.G.7.a.3. (Cont'd) After billet requirements for each position are calculated, the total dutystanding billets are determined by the following procedure:

\* add like positions (i.e., 1B0 Coxswain position requirement with SARDET B0 Coxswain position requirement and boatcrewman positions with comms watch position) and round to next integer if total is equal to or greater than .5.

\* add the fractional portion from all positions that were not previously rounded and if the result is .5 or greater the total billet requirements are rounded to the next integer.

\* If the remaining fractional billets is less than .5 then the fractional portion is dropped.

\* Use Exhibit 2-6 to determine the actual rating/rate distribution of billets.

Example 1: Determine total dutystanding billet requirements for a 1-B0 MLB unit with a 3 month B0 UTB SARDET.

#### Coxswain

$$1-B0 = \frac{365.25 \text{ days} \times 24 \text{ hrs per day}}{1898 \text{ duty hrs available per year}} = \frac{8766}{1898} = 4.62 \text{ billets}$$

$$SARDET = \frac{92 \text{ days} \times 24 \text{ hrs per day}}{1898 \text{ duty hrs available per year}} = \frac{2208}{1898} = 1.16 \text{ billets}$$

TOTAL = 5.78 billets

Total coxswain billets to maintain the year round B0 requirement and the seasonal requirement is rounded up to 6 because the fractional billet required exceeds .5.

#### Engineer

Total engineer billets to maintain the year round B0 requirement and the seasonal requirement is 6 billets and is calculated exactly as shown for the coxswain.

2.G.7.a.3. (Cont'd)

<u>Boatcrewmen/Comms watch</u>				
1-B0	=	$\frac{365.25 \text{ days} \times 24 \text{ hrs per day}}{1898 \text{ duty hrs available per year}}$	=	$\frac{8766}{1898} = 4.62 \text{ billets}$
posn-1				
	=	$\frac{365.25 \text{ days} \times 24 \text{ hrs per day}}{1898 \text{ duty hrs available per year}}$	=	$\frac{8766}{1898} = 4.62 \text{ billets}$
posn-2				
SARDET	=	$\frac{92 \text{ days} \times 24 \text{ hrs per day}}{1898 \text{ duty hrs available per year}}$	=	$\frac{2208}{1898} = 1.16 \text{ billets}$
Comms	=	$\frac{365.25 \text{ days} \times 24 \text{ hrs per day}}{1898 \text{ duty hrs available per year}}$	=	$\frac{8766}{1898} = 4.62 \text{ billets}$

TOTAL BOATCREW/COMMS WATCH = 15.02 billets

Total Boatcrewmen and comms watch billets to maintain the year round B0 requirement, the seasonal requirement and station communications is 15.02 billets. No Rounding is done because fractional portion is less than .5.

The total dutystanding billet requirements (6.0 coxswain + 6.0 engineer + 15.02 boatcrew/comms) is 27.02 billets. Since the fractional billet requirement is less than .5 this total rounds down to 27 billets.

Common Readiness Hours  
(Based on Duty Availability  
Time of 1898 Hours a Year)

<u>Readiness</u>	<u>Annual Readiness Hours</u>	<u>Billets Per Position</u>
1B0	8,766	4.62
2B0	17,532	9.24
3B0	26,298	13.86
5 summer months (153 days)	3,672	1.93
4 1/2 summer months (138 days)	3,312	1.74
4 summer months (123 days)	2,952	1.56
3 summer months (92 days)	2,208	1.16
25 May - 30 Sept (129 days)	3,096	1.63
(1 May - 30 Sept) weekends/holidays	1,115.52	.59
(15 May - 14 Oct) weekends/holidays	1,139.52	.60
(15 May - 30 Aug) weekends/holidays	906.96	.48
(1 May - 30 Aug) weekends/holidays	882.96	.47
(June-Aug) weekends/holidays	650.16	.34
(15 June - 15 Sept) weekends/holidays	674.16	.36
*(1 May - 30 Sept) weekends/holidays	743.68	.39
*(15 May - 14 Oct) weekends/holidays	759.68	.40
*(15 May - 15 Sept) weekends/holidays	606.64	.32
*25 May - 30 Sept weekends/holidays (39.53 days)	632.48	.33

\*Daylight hours & sunrise to sunset unless specified otherwise are assumed to be 16-hour days.

Figure 2-33

2.G.7.b. Special mission/situational work:

ADDITIONAL PRIMARY MISSION AND SPECIAL MISSION REQUIREMENTS

<u>MISSION</u>	<u>ADDITIONAL BILLET</u>
1. SUB-UNIT: A detachment established to meet limited mission responsibilities with minimum support facilities and normally operated on a seasonal basis. Examples include: SARDETs, River Patrols and LEDETs.	Calculated as part of parent unit readiness requirements. (See example Exhibit 2-5.) If sub-unit is continuous for four or more months add a BM1 for sub-unit Supervisor.
2. SRA (with boat): Short Range Aids to Navigation assigned as a primary mission <u>and</u> an ATON boat provided.	1 boatcrew (* Figure 2-30).
3. MAJOR AIDS MAINTENANCE: responsibility to maintain systems or facilities of major automated aids; i.e. LTSTA, FOGSIGNALSTA and LASTA.	Based on Chapter 2 Section B calculations.
4. PES (with boat): Port Safety assigned as a primary mission <u>and</u> a boat provided to support the mission.	1 boatcrew (* Figure 2-30).
5. WATCH TOWER: to provide visual surveillance of local area during periods of hazardous bar conditions <u>and</u> heavy boating activity. Separate justification required.	Compute hours tower must be staffed and then divide by duty (1898) availability time. Add billets required to boatcrewman/comms billets at parent unit.
6. BAR BACKUP: to provide ready availability of second boatcrew when hazardous bar conditions exist <u>or</u> when general operational considerations dictate. Separate justification required.	Calculated as part of unit readiness requirements to ensure availability of one boatcrew (*Figure 2-30) above 1-B0 staffing.

Figure 2-34



MISSIONADDITIONAL BILLETS

- |   |  |
|---|--|
| <p>7. ELT (High Threat):<br/>Law Enforcement assigned as a primary mission where the threat <u>and</u> tasking level requires 4 person boatcrews as minimum staffing. Threat assessment for particular geographic area is required.</p> | <p>Four person boatcrew. Additional operational training and billet upgrades may be required.</p>        |
| <p>8. ELT (Fast Boat):<br/>Law Enforcement assigned as a primary mission <u>and</u> a high performance "Fast Boat" provided.<br/>(Planning Factor Only)</p>   | <p>Will be manned as a special mission assignment in accordance with approved concept of operations.</p> |

NOTE: where description of primary mission and special mission requirements state "and" both conditions must exist in order to justify additional billet allowances.

Figure 2-34 (Cont'd)

- c. Support Requirements: A certain number of support billets are necessary for station administration. They vary based on the proximity to other military support facilities, remoteness from the group office, other units supported, etc. Support billets are not standard, but rather vary station by station. Criteria and guidance for optional support billets common to stations are provided below.
- (1) Housing support: based on criteria in Chapter 4 Section I.
  - (2) Subsistence Specialist: based on criteria in Chapter 4 Section G. Figure 2-32 provides precalculated determinations.
  - (3) Messcooks: based on criteria in Chapter 4 Section H. Figure 2-32 provides precalculated determinations.
  - (4) Electronics Technician: 1 ET2 or 1 ET1 if 41' UTB(s) or 44' MLB(s) assigned.

- 2.G.7.c.(5) Facility maintenance: dutystanding personnel normally perform routine maintenance and housekeeping functions of station grounds and buildings. Additional billets may be justified based on workload analysis. Contract maintenance should be considered as an alternative.
- (6) Facility engineering: Damage Controlman billets may be justified when a host unit has a large number of tenant facilities to maintain. Documentation must be detailed and include types of facilities to be maintained, square footage of space to be maintained, types of surfaces to be maintained, etc.
- (7) Yeoman: Yeoman support is usually provided by the group office or local personnel center and not normally assigned to stations.
- (8) Storekeeper: based on criteria in Chapter 4 Section M. Billets assigned to stations are counted against the total allowance standard for the group and not normally assigned unless the station staffing is greater than 40 billets.
- d. Command and Control: Command and control billets are both operational and supervisory in nature. They are determined by such factors as the total number of billets, missions assigned, local geographical and political environment, Auxiliary support, tenant commands, boat allowance, etc. Figure 2-35 delineates command and control billets and the grade of each.

# COMMAND AND CONTROL BILLETS

BILLETS*	CO LCDR	CO LT	XO LTJG	CO/XO STAFF CWO	C-IN-C XPO STAFF BMC**	XPO BM1	EPO MKC
59-60	XX		XX	XX	XX		XX
54-58		XX		XX	XX		XX
44-53		XX			XX		XX
41-43		XX	***	XX	XX		XX
37-40				XX	XX		XX ****
34-36				XX	XX		
31-33				XX ***	XX	XX	
12-30					XX	XX	

\* Total dutystanding, special mission and support billets.

\*\* Can be BMCM, BMCS or BMC as the needs of the service dictate.

\*\*\* Default in overlapping areas will be to lower grade/rank unless justification for senior rank provided. BM1 billet will not be authorized where CO is CWO; BMC will be XPO.

\*\*\*\* MKC billet criteria vary based on number and type of boats assigned, multiple B0 posture, special missions, etc.

Figure 2-35

2.G.7.e. Sequence: First, calculate the dutystanding module. Special mission billets are then added. Based on the total, support billet requirements are computed. Finally, command and control billets are determined. In most instances, figuring the support billets needed without including the command and control billets gives the same results as figuring the command and control billets into the calculations. Support billets are usually larger in number than command and control, therefore it is necessary to compute them first. If, however, the support billets are recalculated after the command and control billets are determined, and the number required is higher, then the higher number is used. Figure 2-32 is a precomputed distribution of command and control and subsistence specialist/messcook billets. It includes the iterative methods described above. The following example shows how the billet requirements for the four modules are individually calculated/determined and then combined.

### Sample Station Calculation

Station: Drywater, New Mexico

Readiness: 1 B0 year-round, plus 1 B0 summer weekends/holidays from May 25 through September 30, plus 1 B0 SARDET at Deepwater, New Mexico from May 25 through September 30,

Boat Allowance: 2-44 foot MLBs, 2-41 foot UTBs, 2-16 foot UTLs

Special Missions: Maintenance of Foggy Point Light (automated)

Support needs: 5 units family housing; UPH with mess; ET support for MLB and UTB

#### Dutystanding:

##### a. Positions:

1st B0 = 1-B0 year round (44') = 1 Coxswain (cxn) , 1 Engineer (eng), 2 Boatcrewmen (bc)

2nd B0 = 1-B0 summer weekends/holidays 25 May - 30 September (41') = 1 cxn, 1 eng, 1 bc

3rd B0 = 1-B0 SARDET 25 May - 30 September (44') = 1 cxn, 1 eng, 2 bc

#### Continuous Commswatch

##### b. Calculations:

(1) 
$$\frac{\text{hours of duty required per position}}{\text{duty hours available per billet per year}}$$

(a) 1st B0 = (365.25 days per yr) x (24 hrs/day) / (1898 duty hrs per yr) = 8766/1898 = 4.62 billets per position required

(b) 2nd B0 = 25 May - 30 Sept = 4.2 months  
(4.2 mo/12 mo) x (52.18) weeks per year x (2) days per weekend + (3) holidays = 39.53 days of B0 = (39.53) days x (24) hours per day = 948.62 hours of duty required per position  
(948.62) duty hours / (1898) duty hours available per year = .50 billets per position required

(c) 3rd B0 = 25 May - 30 Sept = 7 days in May + 30 days in June + 31 days each in July and August + 30 September = 129 days = (129) days x (24) hours per day = 3,096 hours of duty required = (3,096) hours of duty / (1898) duty hours available per billet = 1.63 billets per position required.

- (d) Commswatch = (365.25) days per year x (24) hours per day = (8,766) hours of duty per year / (1898) duty hours available per year = 4.62 billets per position required

Total Dutystanding:

	CXN	ENG	BC	COMMS
1st B0 (MLB)	4.62	4.62	9.24	4.62
2nd B0 (UTB)	0.50	0.50	0.50	
3rd B0 (MLB)	1.63	1.63	3.26	
Total dutystanders =	6.75	6.75	13.00	4.62
Total per position =	7	7	(13.00 + 4.62 = 17.62)	
	= 31.62 dutystanding billets			

Special Requirements:

- a) Special mission = Lighthouse maintenance = Chapter 2-E. calculations yield a need for 1 EM2 billet
- b) SARDET supervisor for SARDET Deepwater = 1 BM1 (from Figure 2-34)

Support requirements:

- a. Housing: From Chapter 4 Section I calculations = 0 billets
- b. Electronics: MLBs and UTBs assigned = 1 ET2
- c. Messing:
  - (1) SS = (31.62 duty billets + 1 ET + 1 EM + 1 BM1) x .75 = 25.97 = 2 SS billets = 1 SS1 and 1 SS3 (Chapter 4-L)
  - (2) Messcook = (31.62 duty billets + 1 ET + 1BM1) x .75 = 25.97 = 1 messcook = 1 SN
- d. Total support billets = 4 (1-ET, 2-SS, 1-SN)

Command and Control (CC):

- a. 31.62 dutystanding billets + 2 special mission billets + 4 support billets = 38
- b. From Figure 2-34: unit rates an MKC = 39
- c. 39 billets = BMC for XPO and CWO for CO

Exhibit 2-5 (Cont'd)

RECALCULATION of SS/messcook billets =

(31.62 duty billets + 2 SM + 1 support + 3 CC) x .75 = 28.22  
= 2 SS and 1 messcook = no adjustments to above. (Note cooks  
and messcooks are not used to justify each other)

TOTAL UNIT STAFFING:

CXN = 7  
ENG = 7  
BC/COMMS = 18  
SM = 2  
SUPPORT = 4  
CC=3

---

0--1--40--0

Actual distribution of dutystanding billets will be in  
accordance with Exhibit 2-5.

Exhibit 2-5 (Cont'd)

STATION STAFFING LEVELS  
DUTYSTANDING BILLET DISTRIBUTION  
(INCLUDES COMMS WATCH BILLETS)

TOTAL DUTYSTANDER BILLETS	DISTRIBUTION								TOTAL DUTYSTANDER BILLETS
	BM1	BM2	BM3	SN/SA	MK1	MK2	MK3	FN/FA	
12	0	2	2	3	1	1	1	2	12
13	0	2	3	3	1	1	1	2	13
14	0	2	3	4	1	1	1	2	14
15	0	2	3	4	1	1	2	2	15
16	0	2	3	5	1	1	2	2	16
17	0	3	3	5	1	1	2	2	17
18	0	3	3	5	1	2	2	2	18
19	0	3	3	6	1	2	2	2	19
20	0	3	3	7	1	2	2	2	20
21	0	3	4	7	1	2	2	2	21
22	0	3	4	7	1	2	3	2	22
23	0	4	4	7	1	2	3	2	23
24	0	4	4	8	1	2	3	2	24
25	0	4	4	8	1	2	4	2	25
26	0	4	4	9	1	2	4	2	26
27	0	4	5	9	1	2	4	2	27
28	0	4	6	9	1	2	4	2	28
29	0	4	6	9	1	2	4	3	29
30	1	4	5	9	1	3	4	3	30
31	1	4	5	10	1	3	4	3	31
32	2	4	5	10	1	3	4	3	32
33	2	4	5	10	1	3	5	3	33
34	2	4	5	10	2	3	5	3	34
35	2	4	5	10	2	3	5	4	35
36	2	5	5	10	2	3	5	4	36
37	2	5	6	10	2	3	5	4	37
38	2	5	6	10	2	4	5	4	38
39	3	5	6	10	2	4	5	4	39
40	3	5	6	11	2	4	5	4	40
41	3	5	7	11	2	4	5	4	41
42	3	5	7	11	2	4	6	4	42
43	3	5	7	12	2	4	6	4	43
44	3	5	7	12	2	4	7	4	44
45	3	5	7	13	2	4	7	4	45
46	3	5	7	14	2	4	7	4	46
47	3	5	8	14	2	4	7	4	47
48	3	5	8	14	3	4	7	4	48
49	3	5	8	14	3	5	7	4	49
50	3	5	8	14	3	5	7	5	50
51	3	5	8	15	3	5	7	5	51
52	3	5	8	15	3	5	8	5	52
53	3	6	8	15	3	5	8	5	53

Exhibit 2-6

2-84



TOTAL DUTYSTANDER BILLETS	DISTRIBUTION								TOTAL DUTYSTANDER BILLETS
	BM1	BM2	BM3	SN/SA	MK1	MK2	MK3	FN/FA	
54	4	6	8	15	3	5	8	5	54
55	4	6	8	16	3	5	8	5	55
56	4	6	8	16	4	5	8	5	56
57	4	6	8	16	4	5	8	6	57
58	4	6	8	16	4	6	8	6	58
59	4	7	8	16	4	6	8	6	59
60	4	7	9	16	4	6	8	6	60
61	4	7	9	16	4	6	9	6	61
62	4	7	9	17	4	6	9	6	62
63	4	7	9	17	4	6	9	7	63
64	4	7	10	17	4	6	9	7	64
65	4	7	10	17	4	7	9	7	65

Exhibit 2-6 (Cont'd)

SECTION H  
COASTAL SARFACS  
(To be developed)

**SECTION I**  
**Marine/Port Safety**  
**(To be developed)**

**SECTION J**  
**Strike Teams**  
**(To be developed)**

**SECTION K**  
**Radio/Communications Stations**  
**(To be developed)**

## 2.L. Vessel Traffic Service.

1. Definition. A vessel traffic service is a Coast Guard shore unit established under the authority of the Ports and Waterways Safety Act of 1972 (as amended) to reduce the probability of collisions, groundings, and ramblings in congested ports and waterways of the United States, to facilitate the movement of marine commerce, and to support mobilization activities during times of national emergencies. Since each port or waterway has its own geographic features, traffic density, navigational hazards, channels, fairways, traffic routes, and seasonal variations in environmental conditions, each VTS has their own individual equipment and personnel requirements.
2. Introduction. The total number of billets at a VTS is governed primarily by the number of watchstander positions which must be manned on a 24-hour basis. This number is usually determined by the Commandant based on equipment configuration, complexity of the VTS, and workload. Four types of watchstander positions have been established: watch supervisor; assistant watch supervisor; sector operators; and training positions.
  - a. Watch Supervisor. The commissioned officer or civilian watchstander responsible to the Command Officer while on duty for the overall operations of the VTS.
  - b. Assistant Watch Supervisor. The individual normally assigned to a VTS who assists the watch supervisor in monitoring traffic, supervising the sector operators, and handling external communications (EXCOM) not related to active traffic management. The assistant also provides relief to sector operators when necessary.
  - c. Sector Operator. The individual responsible to the watch supervisor for communications with participants; collection and analysis of vessel traffic data through radar, CCTV, and other sensors; and routine vessel traffic evaluation and advisories required in a VTS sector. Under certain circumstances one watchstander may be able to cover more than one sector.
  - d. Training Positions. A number of training positions for new personnel are required for on-the-job training. Personnel reporting on board each VTS must undergo an average six month training program regardless of prior experience or training before they can assume an independent watch. Generally, one training position will be provided for each 10

2.L.2.d. (Cont'd) watchstanders. This requirement may be modified at individual units based on actual need.

3. Standards. Each VTS is evaluated individually by Commandant for the required number of watchstanding positions, specific operating requirements, and other influencing factors such as location, availability of support facilities, community, relations, etc. These factors may alter the final VTS staffing level and should be specifically identified when either requesting allowance changes or developing staffing levels for new units.

4. Staffing Calculation. VTS staffing levels are determined for four categories:

- a. Command billets. The command billet allowance for a VTS includes a Commanding Officer (CDR) and an Executive Officer (LCDR/GM or GS).
- b. Support billets. Full time administrative support is provided by one YN2. Electronics maintenance support is provided by one ET1 at those VTSS without maintenance contracts. The need for an ET1 at a particular unit may change as equipment replacements occur.
- c. Position watchstanders. Watchstander staffing at each VTS is primarily a factor of the number of required watchstander positions. Watches may be staffed by all military or all civilian personnel, or some combination of the two. Military watchstanders may be officers, radarmen, and quartermasters. Enlisted billets will normally be staffed with a minimum pay grade of E-4. Watchstander positions may include: an officer or civilian supervisor; an assistant supervisor; and sector operators. Training positions are required to train and qualify new personnel. Total watchstanding personnel at an individual VTS may be determined in the following manner:

- (1) Determine total watchstanding availability time in hours per year of both military and civilian personnel using guidance provided in Chapter 1. Time for lunch, position breaks, and pre-position briefings should be considered in total watchstanding time available. Also consider time required for annual and sick leave, court leave, required physicals, human relations meetings, details, other excused absences, and annual refresher training.

- 2.L.4.c. (2) Divide 8766 hours per year for each position by total availability to determine number of personnel required per position.
- (3) Multiply the number of personnel required per position by the number of watchstanding positions to determine the number of watchstanders required.
- d. Training positions. Add to the number of watchstanders required the number of required training positions based on actual unit experience.



### EXAMPLES OF STAFFING CALCULATION:

The following are three (3) scenarios using the VTS Staffing Calculation for a large northeast VTS requiring five (5) watch positions.

#### SCENARIO 1. All civilian watchstanders on an 8 hour watch.

Determine civilian availability. Assume 40 hour work week, 8 hour work days. Civilian availability is 2087 hours per year (365.25 days/7 days per week x 40 hours per week = 2087);

2087 hours  
(-) 210 hours leave  
(-) 80 hours TAD (shiprides, area familiarization, etc)  
1797 hours available, or 225 work days.

Subtract time lost each working day  
lunch 30 minutes  
position breaks 40 minutes  
pre-position briefings 15 minutes  
pre-duty briefing 5 minutes  
total 90 minutes, or 1.5 hours per working day

225 work days x 1.5 hours = 337 hours

Total hours available 1797 hours  
For position coverage per year less 337 hours  
total 1460 hours (or 28 hours  
watchstanding time per week)  
8766 hours required per year per watch position (24 hours x  
365.25 days)

Total personnel required for each watch position:  
8766 hours/1460 hours = 6 personnel

Five positions required for this VTS x 6 = 30 personnel  
Plus training positions (one for each 10) 3  
Total 33 watchstanding  
personnel

#### SCENARIO 2. All military watchstanders on a 12 hour watch.

Determine military availability. Assume 42 hour work week, 12 hour work days. Military availability is 2191 (365.25 days/7 days per week x 42 hours per week = 2191)

2191 hours  
(-) 300 hours leave  
(-) 120 hours TAD  
1771 hours available, or 148 work days



### CHAPTER 3 — Staffing Standards for Support Activities.

1. Introduction. This chapter contains staffing standards for Support Activities.
2. Definition. Support Activities are those with the primary objective to provide support or service to the Coast Guard. These are staffed primarily with a mix of support and operational personnel.



**SECTION A**  
**AREA OFFICES**  
**(To be developed)**

SECTION B

MAINTENANCE AND LOGISTICS COMMANDS

(To be developed)

SECTION C  
DISTRICT OFFICES  
(To be developed)

### 3.D. Group Offices.

1. Introduction. A group office is a Coast Guard shore unit which provides command and general support for various units in a geographic area. Among units commonly found in a group are stations, air stations, bases, aids to navigation teams, electronics repair shops, patrol craft, inland buoy tenders, and harbor tugs. There is no limit on the number, size, or complexity of the units that may comprise a group. Despite the potential spectrum of group units, most groups command and support the primary mission areas of search and rescue and aids to navigation. This chapter will develop staffing criteria for prototype groups based on these two mission areas (see section 2 for a definition of a group with a full range of missions.) Presently, this prototype staffing will be directly applicable to 75% of existing group staffs and indirectly applicable to the remainder. Indirect application would involve adjusting staffing levels where missions and functions are performed at levels above or below those prescribed for the prototype group.

- a. Examples of groups with additional missions or functions:

- (1) Groups assigned as Captain of the Port.
- (2) Groups with a large specialized workload, such as those that require additional communications position watches.

- b. Example of groups not having a full range of missions or functions:

- (1) Second District groups which perform aids to navigation support but have no primary search and rescue responsibility.

2. As an intermediate level of command between the District Office and the unit, a Group Commander is specifically responsible for the following functions:

- a. Command and control over group units, personnel and equipment.
- b. Coordination of group units functioning in common mission areas.
- c. Central administration of group personnel functions.
- d. Coordination of financial and supply functions.
- e. Coordination of maintenance and repair of all group vessels, vehicles, structures, machinery and equipment.
- f. Maintenance of group operational readiness.



- 3.D.3.a. Group Office - A shore unit comprised of the Group Commander and his immediate group office staff. The Group Commander exercises command over and provides administrative support to assigned units located in a specific geographic area. Either the Group Commander or Deputy Group Commander may function at additional levels in the command structure.
- b. Group - A collective term for the group office and assigned subordinate units.
- c. Group having a full range of mission responses - Historically this is the most common group organization, containing the following units:
- (1) a combined total of two or more SAR units, including stations, coastal SAR facilities, Port Safety stations, Bases, Air stations, and WPBs.
  - (2) One or more aids to navigation teams, or performance of a primary aid to navigation support through the use of station personnel, boats and/or tenders.
  - (3) One or more cutters: patrol craft, harbor tugs or buoy tenders.
  - (4) Access to a support center, base or depot for maintenance and repair services. The particular base or depot will usually be a group unit.
  - (5) Access to electronic repair facilities for maintenance and repair services. The particular ES, EST, ESM, or ESMT may or may not be a group unit, or the functions may be assigned to the base or support center.
4. Standards. Group office staffing standards as developed in this chapter serve as a guide for basic staffing levels. The end product is a prototype staff which may require adaptation for specific environments.
5. Staffing Requirements. Total group office staffing requirements are governed by the following parameters:
- a. Primary missions performed by group units.
  - b. Additional duties performed by the group office through increased missions or co-location.
  - c. Combined number of billets and positions in the group.
  - d. Maintenance and repair requirements for group facilities and equipment.
  - e. Availability of supporting units both inside and outside the group organization.

3.D.6. Staffing Calculation Sequence. Group office staffing requirements are calculated in fifteen functional areas based on varying supporting criteria as detailed below.

a. Supporting criteria.

- (1) Command level - The scope and complexity of group functions, adjusted to reflect any additional responsibilities assigned to the Group Commander and/or Deputy Group Commander. See figure 3-1.
- (2) Operations - The number of stations and cutters assigned.
- (3) Aids to Navigation - The number of units servicing navigational aids.
- (4) Operations Center - Continuous shift watchstanding criteria Chapter 1-D.
- (5) Communications Center - Continuous shift watchstanding criteria Chapter 1-D.
- (6) Law Enforcement/Readiness - Degree of group functional performance in these mission areas.
- (7) Captain of the Port/Port Safety/Environmental Protection - Assignment of COTP missions - Marine Safety Standards - Chapter 2-I.
- (8) Engineering - Location of support center or base and its organizational relationship with the group. Degree of intermediate level maintenance supervised.
- (9) Electronics - Location of electronics repair support and its organizational relationship with the group.
- (10) Maintenance - Location of support center or base and its organizational relationship with the group. Degree of intermediate level maintenance supervised.
- (11) Administration - Combined number of billets and positions assigned to group.
- (12) Personnel Support - Coast Guard-wide standards.
- (13) Medical - Location of any supporting medical facilities.
- (14) Housing Support - Coast Guard-wide standards for government owned or leased housing - Chapter 4-I.
- (15) Comptroller - Number and type of group units and Coast Guard-wide standards.

3.D.6.b. Organizational Relationship. Figure 3-2 depicts suggested relationships of the fifteen functional areas from which staffing levels are developed. This next section develops specific billet and grade level requirements.

7. Command Standards.

- a. Group Commander. The appropriate grade level of the Group Commander is dependent on both the number of group personnel and the complexity of additional responsibilities assigned due to co-location or increased mission criteria, which is best indicated by the total billets assigned to the group. Should additional duties assigned to the Group Commander qualify him for a higher grade level because of criteria contained elsewhere in this manual, then the higher grade level will be used.
- b. Deputy Group Commander. As a general rule the Deputy Group Commander will be one grade level below the Group Commander, with the maximum grade level of Lieutenant Commander. When the Group Commander is also the Commanding Officer of a co-located air station, a surface operations specialist billet will be provided for a Deputy Group Commander. The recommended billet level for the Deputy Group Commander, based upon the number of Group billets/positions, excluding air station Personnel, shall be Lieutenant for groups with less than 180 billets/positions and Lieutenant Commander for groups with 180 or more billets/positions. Should the Deputy Group Commander be assigned duties qualifying him for a higher grade level because of criteria contained elsewhere in this manual, then the higher grade level will be recommended.

Group Commander/Deputy Group Commander Grade Level

Billets/Positions Assigned To Groups	Recommended Grade Levels	
	<u>Group Commander</u>	<u>Deputy Group Commander</u>
260 and over	CAPT	LCDR
180 - 259	CDR	LCDR
135 - 179	LCDR	LT
60 TO 134	LT	LITJG
up to 59	LITJG	CWO (BOSN)

Figure 3-1

Group Staff Functional Elements

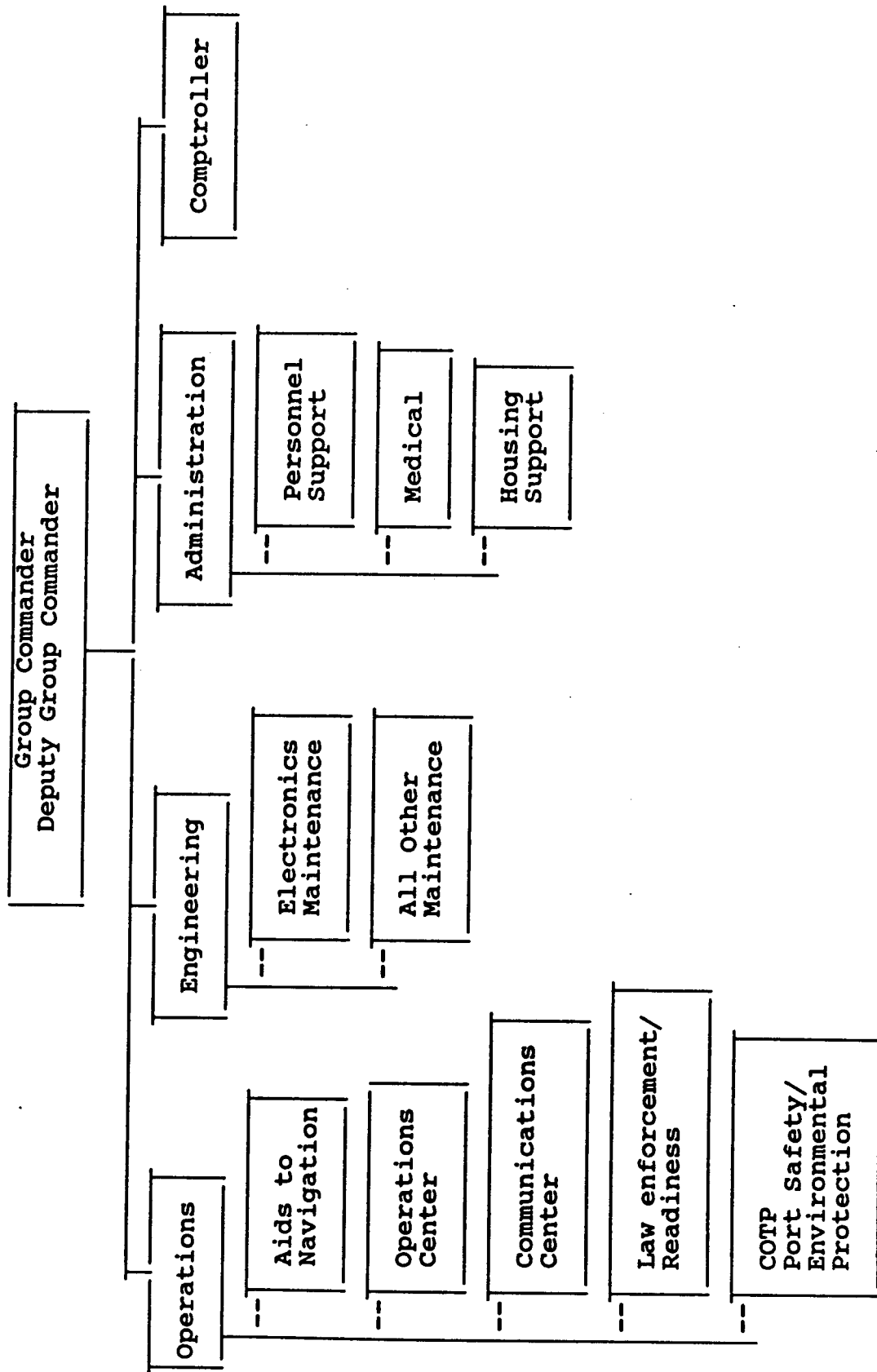


Figure 3-2

3.D.8. Operations Standards. This section provides staffing recommendations for the Operations Officer, Aids to Navigation Officer, operations center, communications center, Law Enforcement/Readiness Officer, and OOTP staff.

- a. Operations Officer. Operations Officer staffing levels are depicted in Figure 3-3.

OPERATIONS OFFICER STAFFING LEVELS

<u>Group SAR Units</u>	<u>Staffing Level</u>
12 or more stations/cutters	LT
6 to 11 stations/cutters	LTJG
1 to 5 stations/Cutters	CWO (BOSN)

Figure 3-3

- b. Aids to Navigation Officer/Petty Officer. Groups with significant aids to navigation responsibilities will be assigned a billet for an AN Officer/Petty Officer to supervise the operations, inspect the material condition, and coordinate the training of group AN units. The Operations Officer in groups with 1 to 5 SAR units will assist the AN Officer with his duties, unless the number and type of AN units and SAR workload warrants an additional AN staff billet. Appropriate staffing levels for groups with less than three aids to navigation units will be determined on an individual basis.

- (1) AN units include: aids to navigation teams, buoy tenders, light stations and other shore units with a significant aids to navigation responsibility.

Aids to Navigation Officer/Petty Officer Staffing Levels

<u>AN Units</u>	<u>Staffing Level</u>
6 or more	CWO (BOSN)
	BM1
3 to 5	BMCS

Figure 3-4

- c. Operations Center. Group command and control as well as the function of SAR mission coordinator is exercised through the group operations center. It consists of a one position continuous shift watch stood at the operations center by senior operational petty officers. The watch answers individual station remoted distress lines and coordinates mission responses of group units to meet a varying case

- 3.D.8.c. (Cont'd) load. Staffing consists of one chief petty officer and four first class petty officer billets. Normally these billets would be distributed as: 1-QMC, 2-QM1, 2-BM1, dependent upon service-wide requirements in particular ratings.
- d. Communications Center. The communications center provides a 24 hour watch to monitor national distress frequencies on medium-frequency (MF) and very high-frequency (VHF-FM) plus additional frequencies as the situation warrants. Assignment of radiomen will be in accordance with the service-wide standards for billets in Chapter 2-K.
- e. Law Enforcement/Readiness. This function will be staffed in accordance with Figure 3-5. Mission areas include:
- (1) Law Enforcement: Substantial and regular enforcement of laws and treaties, or rendering assistance to other federal law enforcement agencies on a regular basis by group units.
  - (2) Readiness: Maintenance of small arms inventory or having armed cutters assigned to group.

Law Enforcement/Readiness Staffing

<u>Number of Different Missions Performed</u>	<u>Recommended Staffing</u>
2	GM 1
1	GM 2

Law enforcement/Readiness Petty Officer will also be a resource for COTP functions, if assigned.

Figure 3-5

- f. Captain of the Port/Port Safety/Environmental Protection. COTP will normally be assigned to the Marine Safety Office; however, in areas without MSO's, Groups may be assigned COTP, or port safety or environmental protection missions and will be staffed in accordance with standards developed in Chapter 2-I.
9. Engineering Standards. This section provides staffing recommendations for the Engineering Officer, Electronics Maintenance Officer and maintenance support personnel to conform with the three level maintenance concept.
- a. Engineering Officer. One CWO (ENG or MAT) billet will be provided for groups assigned a combination of 10 or more cutters and boats larger than 24 feet. For groups with less than 10 craft, one chief petty officer billet in EM, DC, or

3.D.9.a. (Cont'd) MK rating will be assigned, and will also serve as the senior Maintenance Support Advisor.

- b. Electronics Maintenance Officer. In groups with an ES, EST, ESM, or ESMT, the Commanding Officer/Officer-In-Charge of the electronics shop will be assigned the additional duty of group EMO if the particular unit is co-located with the group office. In groups not meeting this criteria, the Group Engineering Officer will also function as the group EMO.
- c. Maintenance Support Advisor. Senior petty officer billets with engineering specialties provide the Group Commander with technical expertise, and coordinate or perform intermediate level maintenance for group units as required. These billets are not used for accomplishment of organizational or depot level maintenance work.

One billet for each of the three engineering ratings is provided.

1-CPO MK/EM/DC

2-PO1 one billet for each rating remaining

It is envisioned that these billets will provide expertise sufficient for the accomplishment of intermediate level maintenance through either supervision of unit work forces or outside contractor personnel, i.e. private or Coast Guard base/support center. In the event stations do not meet the MK staffing levels prescribed in Chapter 2-G, an interim Maintenance and Repair workforce would be authorized at the group level. This workforce should be of sufficient size and complexion so as to provide adequate organizational and intermediate level maintenance to cover engineering billet deficiencies at units.

- 10. Administration Standards. This section provides staffing recommendations for the administrative officer, personnel support, medical and housing support functions.

- a. Administrative Officer.

Administrative Officer Staffing Level

<u>Group Billets/Positions</u>	<u>Staffing Level</u>
Over 350	LTJG
	CWO(PERS)
200 - 349	LTJG*
100 - 200	CWO(PERS)

Figure 3-6

\*In groups with 200-243 billets/positions standards will be modified to provide a YNCS in lieu of YNC.

- b. Personnel Support. Group administrative functions are normally performed by the group staff. This envisions that

3.D.10.b. (Cont'd) service record maintenance, correspondence generation and general personnel management will be performed by yeomen assigned to the group staff rather than to individual units. In order to determine the required number of yeomen, total the number of billets in the group and extract the quantity and grade level of yeomen from the service-wide standards in Chapter 4-F.

Example: A group contains 315 billets/positions. (This includes group units plus any additional units under the administrative control of the group.)

1-YNCS

1-YN1

2-YN2

3-YN3

Note: It is not necessary for all Yeomen to be assigned to the group staff. Once the total is determined, billets can be apportioned among various large units as local workloads require. If this approach is taken additional billets will not be provided for the group staff. The total number of Yeomen assigned to all group units including the staff should not exceed the staffing criteria established for the group as a whole.

c. Medical. If the group receives direct medical support from a Coast Guard medical facility then no medical personnel will be assigned to the group. If medical support is not available then 1-HM2 will be assigned to the group staff. Medical support is defined as:

- (1) Sanitary inspection and pest control services for group units.
- (2) Routine inoculation administration.
- (3) First aid training.
- (4) Periodic review of all health records.
- (5) Advice to the Group Commander on medical matters.

When the group has a sick bay or dental clinic, additional medical support staffing requirements may be calculated in accordance with the standards continued in Chapter 4-L.

d. Housing Support. A group housing representative will be assigned if the group maintains government owned or leased housing in sufficient quantities to rate a billet in accordance with the service-wide criteria in Chapter 4-I. Family housing maintenance personnel will normally be assigned to the group unit where the housing is located.



3.D.10.e. Subsistence Accounting. Personnel assigned to group offices as well as other tenant and/or host commands that are subsisting at a unit's general messing facility are to be included in the ration count when determining the required SS staffing level for the general messing facility. Chapter 4-G of this manual provides the guidelines for determining the SS billet structure for units with general messing facilities.

11. Comptroller. Group supply functions are normally administered by the group staff. This includes overall OG 30 management, requisition procurement, plant property accountability and commercial purchasing authority. In order to determine the required number of storekeepers, total the number of billets in the group and extract the quantity and grade level recommended from the servicewide standards. When a CWO (F+S) is assigned, an SK1 will be assigned in lieu of an SKC. A CWO (F+S) will be assigned as Group Supply Officer under any of the following criteria:

- a. When assigned to any group unit co-located with the group office a CWO(F+S) will be assigned the collateral duty of Group Supply Officer. An exception would be that a CWO(F+S) assigned NAFA duties will not have group collateral duties.
- b. When the size of the group exceeds 200 billets/positions.
- c. When the group comprises five or more large shore units.  
(Large shore units are defined as: air stations, stations, and bases.)

Example: A group comprised of 7 stations contains 182 billets. This requires the following supply staff:

1-CWO (F+S)	(over 5 shore units
1-SK1	chapter 4, Section M
1-SK2	modified by CWO (F+S)
1-SK3	assignment)

Note: It is not necessary for all storekeepers to be assigned to the group staff. Once the total is determined, billets can be apportioned among various large units as local workloads require. If this approach is taken additional billets will not be provided for the group staff. The total number of storekeepers assigned to all group units including the staff should not exceed the staffing criteria established in Chapter 4-M for the group as a whole.

(When more task orientated criteria are developed for storekeeper staffing levels, this section will be expanded to include functional area staffing.)

- 3.D.12. Staffing Criteria Example. Two existing groups are to be combined along with an air station. The group office will be co-located with the air station. This will provide for the following units in the new enlarged group:

1-air station  
4-stations  
2-ANIS  
3-LASTA  
1-WLI  
2-WPB's

Total billet/position allowance excluding staff-220. The recommended staffing for the group office would be:

a. Command.

Group Commander - A group this size would normally be allotted a CDR billet; however, the air station maintains a multi-mission posture and the Group Commander will also serve as its Commanding Officer. (Aviation Standards Chapter 2-F).

CAPT

Deputy Commander - A billet for a surface operations specialist is provided.

LT

b. Operations.

Operations Officer - LTJG (6 stations/cutters)  
Aids to Navigation Officer - CWO(BOSN) (6 AN Units)  
BM1

Operations Center - (Air Station & Group Consolidated)  
1-QMC  
2-QM1  
2-BM1

Communication Center - (Air Station & Group consolidated)  
1 - RM1 (Assume 1 position watch chapter 4)  
1 - RM2  
3 - RM3

Law Enforcement/Readiness-GM1 (Assume 2 missions Performed)  
COTP - Not assigned

3.D.12.c. Engineering.

Engineering Officer - CWO(ENG) (No other engineering specialists assigned to group)

Electronics Maintenance Officer - ETC (Additional duty for co-located ESM senior petty officer)

Maintenance Support - MKC  
EM1  
DC1

d. Administration.

Administrative Officer - LTJG

Personnel Support - YNCS  
YN1  
2-YN2  
2-YN3

Medical - HS2 (Assume no nearby Coast Guard medical facility)

Housing - PO

e. Comptroller.

CWO(F+S) (200 billet/position criteria)  
SK1  
SK2  
2-SK3

Composite staffing: 2 - 3 - 27

Total group billets/positions 252

3.D.13. Summary of Co-location Consolidated Staffing Policies.

Historically the group office is most often co-located at the largest group unit station, air station, base, or port safety station. When this co-location occurs, functions should be as fully consolidated as possible in order to reduce redundant staffing. One or more billets may be consolidated and/or upgraded depending on the size and workload of the co-located units and group sub-units. Some examples of existing consolidated billets follow:

Group Commander/ Base CO  
/ Air Station CO  
/ Port Safety Station CO  
/ COTP

Deputy Commander/ Base XO  
/ Port Safety Station XO  
/ Alternate COTP

Group OPS Officer/ Base OPS  
/ Air Station OPS  
/ Port Safety Stations OPS

Group Engineering Officer/Base Engineering Officer

Group EMO/(CO/OinC) co-located ES, EST, ESM, ESMT

Group Comms Center/Base Comms Center  
/Air Station Comms Center

Group Operations Center/Base Operations Center  
/Air Station Operations Center

#### CHAPTER 4 -- Staffing Standards for Support Facilities.

1. Introduction. This chapter contains staffing standards for Support Facilities.
2. Definition. Support Facilities are those which are staffed to provide services to many operating and support activities. These are usually staffed with support personnel.



A. Electronic Shop.

1. Description. Electronics Technicians (ETs) install, remove, operate, maintain, repair, calibrate, tune, and adjust electronic equipment and systems used for secure and clear communications, cryptography, detection, tracking, navigation, electronic testing, recognition, identification, and surveillance (except avionics, SONAR. RADIAC, and weapons control systems). ETs order and inventory electronics equipment, and prepare and maintain casualty messages, maintenance records and requests. ETs maintain up-to-date electronics drawings and technical libraries. On shore-based units, ETs generally work a 5-day regular work week (day work), plus serve as on-call technicians. This chapter provides a staffing standard for the following shore-based unit types where ETs maintain equipment:
  - a. Groups and Aid-to-Navigation Teams (ANTs)
  - b. Bases/Support Centers
  - c. Electronics Shops (ESs), Electronics Shops Minor (ESMs), Electronics Shops Telephone (ESTs) and Electronics Shops Minor Telephone (ESMTs)
  - d. Communications Area Master Stations (CAMS)
  - e. Communications Stations (COMMSTAs)
2. Standards Development.
  - a. General ET Standard. The fundamental formula for billet determination is: work content/availability = number of billets. Availability includes all direct work, direct travel, and indirect work. Military overhead, and TAD away from the unit are not part of available work time. Coast Guard standard availability for dayworkers is 1,384 hours per year. "Work Content" consists of all ET direct and indirect work. Work content is divided into five categories:
    - (1) Direct Work/Primary Inventory Items -- maintenance on 26 primary operational equipment types listed and counted in the unit's equipment inventory.
    - (2) Direct Work/Miscellaneous Inventory Items -- maintenance on other miscellaneous operational equipment types listed in the unit's equipment inventory.

4.A.2.a.(3) Direct/Non-Inventory -- direct maintenance on operational equipment not listed in the unit's equipment inventory.

(4) Direct Travel -- travel associated with all direct maintenance.

(5) Indirect Work -- other ET technical tasks and duties, including general shop work, general supply/inventory, work on test equipment, general supervision, etc.

b. ET Unit Travel Analysis. Travel to equipment installation sites represents a significant and variable unit workload factor. The staffing standard includes a method of estimating required ET travel, so that an allocation can be factored into the unit billet allocation.

c. Final ET Staffing Formulation: Total Unit work/1,384 = Number of Billets.

d. Grade Distribution Pyramid. The unit grade distribution is shown in Figure 4-1 below:

ET Unit Grade Distribution

<u>Number of Billets In Rate</u>	<u>E-9</u>	<u>E-8</u>	<u>E-7</u>	<u>E-6</u>	<u>E-5</u>	<u>E-4</u>
1 Independent duty, removed from Technical Support				1		
1 Attached with Technical Support					1	
2 Independent duty. removed from Technical Support)				1	1	
2 Attached with Technical Support				1		1
3				1	1	1
4 Independent duty, removed from Technical Support)			1	1	1	1
4 Attached with Technical Support				1	2	1
5			1	1	2	1
6			1	1	2	2
7			1	1	2	3
8			1	1	2	3
8 If CWO(ELC) Assigned		1	1	1	2	3
9			1	2	2	3
9 If CWO(ELC) Assigned		1	1	2	2	3
10			1	2	3	3
10 If CWO(ELC) Assigned		1	1	2	2	4
11			1	2	3	4
11 If CWO(ELC) Assigned		1	1	2	3	4
12			1	2	4	4
	1	1	3	3	3	4

Figure 4-1



### ET Unit Grade Distribution

<u>Number of Billets In Rate</u>	<u>E-9</u>	<u>E-8</u>	<u>E-7</u>	<u>E-6</u>	<u>E-5</u>	<u>E-4</u>
12 If CWO(ELC) Assigned			1	3	4	4
13		1	1	3	4	4
13 If CWO(ELC) Assigned			1	3	4	5
14		1	1	3	4	5
14 If CWO(ELC) Assigned			1	3	5	5
15		1	1	4	4	5
15 If CWO(ELC) Assigned			1	4	5	5
16		1	1	4	4	6
16 If CWO(ELC) Assigned			1	4	5	6
17		1	1	4	5	6
17 If CWO(ELC) Assigned			1	4	6	6
18		1	2	4	5	6
18 If CWO(ELC) Assigned			2	4	6	6
19		1	2	4	5	7
19 If CWO(ELC) Assigned			2	4	6	7
20		1	2	5	5	7
20 If CWO(ELC) Assigned			2	5	6	7
21		1	2	5	6	7
21 If CWO(ELC) Assigned			2	5	7	7
22		1	2	5	7	8
22 If CWO(ELC) Assigned			2	5	8	8
23		1	2	5	8	8
23 If CWO(ELC) Assigned			2	5	8	9
24	1	1	2	5	8	8
25	1	1	2	5	8	9
26	1	1	2	5	9	9
27	1	1	2	5	9	10
28	1	1	2	5	10	10
29	1	1	2	6	10	10
30	1	1	2	6	10	11

\* Independent Duty is an ET located greater than 3 hours from electronics technical support in his/her chain of command.

Figure 4-1 (Cont'd)

3. Staffing Calculations. General staffing calculation procedure is:

- a. Determine Unit Direct Work/Primary Inventory Items.  
Determine the number of hours per year of direct work (excluding travel) required at each unit based on the primary unit equipment inventory. Exhibit 4-1 provides the detailed primary equipment inventory cluster list with the coefficient for each cluster.
- b. Add Other Direct and Indirect Work Allocations.  
After the total annual Direct/Primary Inventory Item work hours are determined, there are proportional allocations for Direct/Miscellaneous, Direct/Non-Inventory, and Indirect Work.

4.A.3.c. Determine Travel Allocation. The allocation for Direct Travel to remote job sites is based on the geographic layout of the unit coverage area. Exhibit 4-2 is used to determine travel time allocation.

d. Complete Summary Chart to Determine Total Unit Work. Determine the annual Total Unit work as shown in Figure 4-2.

Tabulation of Total Unit work

<u>Item</u>	<u>Work Category</u>	<u>Source</u>	<u>Hours/Year</u>
1	Direct/Primary Inventory	Unit Direct Work Tabulation Worksheet (Exhibit 4-3)	_____
2	Direct/Miscellaneous	Item 1 x 13.0%	_____
3	Direct/Non-Inventory	Item 1 x 10.8%	_____
4	Total Direct work	Items 1 + 2 + 3	_____
5	Direct Travel	Unit Travel Time Allocation Worksheet (Exhibit 4-2)	_____
6	Indirect Work	Item 4 x 213.8%	_____
7	Total Unit Work	Items 4 + 5 + 6	_____

Figure 4-2

e. Determine Fractional (Decimal Number) Billet Allocation. Divide the total unit work by 1,384 hours (annual availability time).

f. Determine Whole Number of Billets. The required whole number of billets is derived based on the staffing standards guidelines for rounding (para. 1-E.2.d.).

g. Determine Grade Distribution. The grade distribution for each possible number of ET billets at shore-based units is shown in Figure 4-1.

# ET Equipment Inventory Clusters and Associated Direct Work Allocations

#	<u>Equipment Cluster Description</u>	<u>Examples</u>	<u>DM*</u>
1	Stand Alone Power Supplies	Chargers, generators batteries, CGG-T1670A, CGC-TPN-1123A, CGC-NLN8988A	0.66
2	Switching circuits	Switching consoles, fire alarms, patch panels, electrical contractors, CDBK-6018-3A/132/HST, CDPB-C-99B5/F	4.35
3	.07-9kHz Transmitters	FSK, public address systems, loudhailers, CEN-GLH-100, AN/GGC-59(V) CGG-T-1300-A	2.20
4	.07-9kHz Receivers	FSK, teletypes, AN/GGC-65(V) CCBP-S-168M, CADR-6850	1.29
5	.07-9kHz Receiver- Transmitters	Control heads, modems, FSK converters, teletypes, CGC-Q1053, CGC-T1616C, CEJC-81-0330, CCZC-RF-3500 CDHU-6706-MV	2.60
6	90-110kHz Austron Receivers	Austron LORAN receivers, CDFO-5000Z-PCMS,	88.95
7	90-110kHz Loran Navigation Receivers	CRP-750, CRP-6000	4.38
8	90-110kHz Receiver- Transmitters	Depth Sounder, Fathometers AN/SQN-18( )	2.60
9	110-190kHz Receivers and Receiver-Transmitters	Side scan sonar CCWB-250CG	31.22
10	190-535kHz Transmitters (Radio Beacons)	Radio beacons CDWQ-NX400BD	19.47
11	190-535kHz Transmitters	MF transmitters AN/FRT-89	172.98
12	190-1605kHz Receivers	Radio Direction Finder, MF receiver. Automatic Direction Finder, AN/SRD-21 CEER-511A	6.40

\* Average direct maintenance person-hours required per item per year

Exhibit 4-1

#	Equipment Cluster Description	Examples	MPH*
13	1.605-30MHz Transmitter over .2kW-1.1kw	HF low power transmitters, AM-7255/VR, PP-7989/VR, VRT-41(V)	40.47
14	1.605-30MHz Transmitter over 1.1kw	HF high power transmitters, AM-7254/URT-41( )	159.87
15	1.605-30MHz Receivers	HF receivers, COL-5145-1, CDDS-RA6793A, CEMD-R-2000	2.85
16	1.605-30MHz Receiver-Transmitters	HF transceivers, AN/URC-116, RT-1099/SRC-42(V)	13.43
17	1.605-30MHz Antenna Towers 100 ft and over, with couplers	LPA, RLPH, Baluns, CDNI-540-I-03, CDNI-302	25.06
18	117.975-216MHz Receivers	VHF/Direction Finder, AN/SRD-21, C73RXB1106T	1.84
19	117.975-216MHz Receiver-Transmitters under 10W	VHF/FM hand held transceivers, CCI-802 CGG-H33AAU1160A, CRV-HCB36	1.89
20	117.975-216MHz Receiver-Transmitters 10W-30W	VHF/FM transceivers, CDRJ-NC-7200, CEPZ-7000 CELB-IC-MBO, CGG-D33ABA1520A	8.1
21	117.975-216MHz Receiver-Transmitters 30W and over	VHF/FM high level transceivers, CGG-C53RTB3146CV	27.32
22	216-406MHz Receiver-Transmitters under 25W	UHF transceivers, AN/URC-9	5.60
23	2700-10000MHz Receiver-Transmitters under 10KW	Small boat radar, AN/SPS-66( )	31.77
24	2700-10000MHz Receiver-Transmitters 10KW-25KW	Surface search/cutter radar, AN/SPS-64(V)	51.69
25	.01-900THz Receivers-Transmitters	Fog detectors, CDNC-147.122/222	5.90
26	Crypto equipment	TSEC/KW7, TSEC/KY-75	3.03

\* Average direct maintenance person-hours required per item per year

Exhibit 4-1 (Cont'd)

<u>#</u>	<u>Equipment Cluster Description</u>	<u>Examples</u>	<u>MPH*</u>
----------	--------------------------------------	-----------------	-------------

MISCELLANEOUS (see Exhibit 4-3, Sample Unit Tabulation of Total Unit Work, Item 2): The miscellaneous category includes equipment items not included in any of the 26 primary equipment clusters. Miscellaneous equipment items are not counted individually; a standard supplemental allocation of 10.8% of primary equipment item direct work is provided by Item 2 of the Staffing Standard. The following list contains examples of equipment items considered miscellaneous (i.e., NOT counted in any of the primary equipment clusters):

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>- 0-70Hz Motors</li> <li>- 9-14Hz Tuning Set</li> <li>- 535-1605kHz Transmitter</li> <li>- 117.975-216MHz Transmitters</li> <li>- .01-900THz Transmitters</li> <li>- 406.1-902MHz Receivers-</li> <li>Transmitters 25w-100W</li> </ul> | <ul style="list-style-type: none"> <li>- 9-14Hz Receivers</li> <li>- 90-110kHz Transmitters</li> <li>- 1.605-30MHz Couplers</li> <li>- 902-2700 Receiver-Transmitters</li> <li>- CDDJ-CM2020</li> </ul> |
|---|---|

Exhibit 4-1 (Cont'd)

## Instructions for Completing Travel Time Allocation Form for ET Unit

1. List PM Sites. On the PM site list (Figure 4-3) list all sites located more than 15 minutes (0.25 hours) from the unit requiring scheduled PM. Do not include PM performed by non-ETs or contractors. Do not include non-PM work sites. If any two maintenance locations are less than 10 minutes apart from each other, they should be considered as part of the same site. For each site state:

- The site name and location.
- The "PM Driver"/Equipment Type. Each site can have only one PM Driver (i.e., the equipment item requiring the most frequent PM travel (i.e., the "driver" for PM).
- Brief Description of the PM performed (e.g., clean, adjust, lubricate, check voltage).
- Method of Travel. (To and from the site).
- Frequency of PM at the site. Classify as one of six categories: weekly (w), Semi-Monthly or twice a month (SM). Monthly (M), Quarterly (Q). Semi-Annually (SA). or Annually (A). If the PM schedule for a site is not exactly one of these six, choose the closest of these six.

2. Map PM Sites. Using a copy of a map of the unit ET coverage area (e.g., a photocopy of your office map). Label each site, including the W, SM, M, Q, SA, or A designations. Be sure that the map has a distance scale, and that it shows major roadways traveled. Indicate any sites that cannot be reached by motor vehicle or that otherwise represent difficult access points.

3. Estimate PM Travel Time for PM Circuit Trips ("Most-Efficient PM Travel"). Estimate the travel time in hours (e.g., 4.50) necessary to make one complete, continuous circuit trip to visit each site where PM is performed. This estimate should account for distance, speed limits, traffic density, and other similar routine factors. Label the map with the travel times between sites indicating the travel path necessary for a continuous circuit trip. Weekly (W), Semi-Monthly (SM). Monthly (M), Quarterly (Q), Semi-Annually (SA), and Annually (A) trips will be considered. (Enter as required for Lines A through E below).

NOTE: Assume one ET traveling by usual travel mode. Include travel time only. Do not include time for performance of PM, overnight stays, lunch, breaks, or unanticipated delays (e.g., traffic jams, car trouble, missed connections).

Exhibit 4-2

#### 4. Complete Travel and Tabulation Chart.

Line A - Enter the total time for (W) PM.  
Line B - Enter the total time for (W) and (SM) PM.  
Line C - Enter the total time for (W), (SM), and (M) PM.  
Line D - Enter the total time for (W), (SM), (M), and (Q) PM.  
Line E - Enter the total time for (W), (SM), (M), (Q), and (SA) PM.  
Line F - Enter the total time for (W), (SM), (M), (Q), and (SA) (A) PM.

Multiply Column (3) Trips/Year by Column (4) Hours/Trip and enter amount in Column (5) Total Hrs/Yr.

Add Column (5) and enter total in Column (5) TOTAL (Estimated PM-Related Travel/Year).

#### Estimated PM Travel Tabulation Chart

(1) Line	(2) Trip Category	(3) Trips/Year	(4) Hours/Trip	(5) Total Hrs/Yr
A	Weekly (W)	28	x _____	= _____
B	W + SM	12	x _____	= _____
C	W + SM + M	8	x _____	= _____
D	W + SM + M + Q	2	x _____	= _____
E	W + SM + M + Q + SA	1	x _____	= _____
F	W + SM + M + Q + SA + A	1	x _____	= _____
TOTAL (Most Efficient PM-Related Travel/Year)				_____

5. Estimate Total Travel Required. Multiply Total Most-Efficient PM-Related Travel/Year by 4.16 to determine the total hours allocated to the unit for all travel.

\_\_\_\_\_ x 4.16 = \_\_\_\_\_ Direct Travel

6. Enter Total Unit Travel on Item 5, Direct Travel (Figure 4-2).

NOTE: The multiplier 4.16 was derived from the ET Staffing Study.

Exhibit 4-2 (Cont'd)

# Unit PM Site List

Unit: \_\_\_\_\_

## UNIT PREVENTIVE MAINTENANCE SITE LIST

	<u>Name/Location</u>	<u>"PM Driver"</u> <u>Equipment Type</u>	<u>Brief Description</u> <u>of PM Performed</u>	<u>Method</u> <u>of Travel</u>	<u>Freq. (W, SM, M</u> <u>Q, SA, or A)</u>
1.	_____	_____	_____	_____	_____
2.	_____	_____	_____	_____	_____
3.	_____	_____	_____	_____	_____
4.	_____	_____	_____	_____	_____
5.	_____	_____	_____	_____	_____
6.	_____	_____	_____	_____	_____
7.	_____	_____	_____	_____	_____
8.	_____	_____	_____	_____	_____
9.	_____	_____	_____	_____	_____
10.	_____	_____	_____	_____	_____
11.	_____	_____	_____	_____	_____
12.	_____	_____	_____	_____	_____
13.	_____	_____	_____	_____	_____
14.	_____	_____	_____	_____	_____
15.	_____	_____	_____	_____	_____
16.	_____	_____	_____	_____	_____



### Sample Staffing Calculation

1. Inventory. Hypothetical unit ES Capital City has the following inventory.

<u>EQUIPMENT</u>	<u>LOCATION</u>
Stand alone power supplies	ES Capital City
Loudhailers	ES Capital City
FSK converters	ES Capital City
Loran Navigation Receivers	ES Capital City
Depth Sounders	ES Capital City
Radio Beacons	STA Langway
HF transceiver	CGC Pt. Gould at STA Gustafsson
Antenna Towers	STA Murray Inlet
VHF/FM hand held transceivers	ES Capital City
VHF/FM transceivers	ES Capital City
VHF/FM high level transceivers	ES Capital City
UHF transceiver	CGC Cape Peters at STA Malarchuk
AN/SPS-66A Radar	STA Garnerville
AN/SPS-64 Radar	CGC Cape Ridley at GRU Stevens City
KY-75/TSEC Crypto	CGC Island Class at GRU Stevens City
Crypto Equipment	ES Capital City

2. Determine Direct Work/Primary Equipment Items. Exhibit 4-3 shows the completed direct work tabulation sheet for ES Capital City:

Exhibit 4-3

Sample Unit Direct Work/Primary Equipment Items Tabulation Worksheet

#	<u>Equipment Description</u>	<u># Items in Unit Inv.</u>	<u>MPH*</u>	<u>Total Work (Hrs/Year)</u>
1	Stand Alone Power Supplies	<u>40</u>	<u>0.66</u>	<u>26.40</u>
2	Switching circuits		<u>4.35</u>	
3	.07-9kHz Transmitters	<u>20</u>	<u>2.20</u>	<u>44.00</u>
4	.07-9kHz Receivers		<u>1.29</u>	
5	.07-9kHz Receiver- Transmitters	<u>8</u>	<u>2.60</u>	<u>20.80</u>
6	90-110kHz Austron Receivers		<u>88.95</u>	
7	All other 90-110kHz Receivers	<u>12</u>	<u>4.38</u>	<u>52.56</u>
8	90-110kHz Receiver- Transmitters	<u>9</u>	<u>2.60</u>	<u>23.40</u>
9	110-190kHz Receivers and Receiver-Transmitters		<u>31.22</u>	
10	190-535kHz Transmitters (Radio Beacons)	<u>2</u>	<u>19.47</u>	<u>38.94</u>
11	190-535kHz Transmitters		<u>172.98</u>	
12	190-1605kHz Receivers		<u>6.40</u>	
13	1.605-30MHz Transmitter .2kW-1.1kW		<u>40.47</u>	
14	1.605-30MHz Transmitter over 1.1kW		<u>159.87</u>	
15	1.605-30MHz Receivers		<u>2.85</u>	
16	1.605-30MHz Receiver- Transmitters	<u>1</u>	<u>13.43</u>	<u>13.43</u>
17	1.605-30MHz Antenna Towers 100 ft and over, with couplers	<u>2</u>	<u>25.06</u>	<u>50.12</u>
18	117.975-216MHz Receivers		<u>1.84</u>	

\* Average direct maintenance person-hours required per item per year

Exhibit 4-3 (Cont'd)

Sample Unit Direct Work/Primary Equipment Items Tabulation  
Worksheet (Cont'd)

<u>#</u>	<u>Equipment Description</u> <u>(Hrs/Year)</u>	<u># Items in</u> <u>Unit Inv.</u>	<u>MPH*</u>	<u>Total Work</u>
19	117.975-216MHz Receiver- Transmitters under 10W	<u>21</u>	<u>1.89</u>	<u>39.69</u>
20	117.975-216MHz Receiver- Transmitters 10W-30W	<u>18</u>	<u>8.13</u>	<u>146.34</u>
21	117.975-216MHz Receiver- Transmitters 30W and over	<u>3</u>	<u>27.32</u>	<u>81.96</u>
22	216-406MHz Receiver- Transmitters under 25W	<u>1</u>	<u>5.60</u>	<u>5.60</u>
23	2700-10000MHz Receiver- Transmitters under 10KW	<u>1</u>	<u>31.77</u>	<u>31.77</u>
24	2700-10000MHz Receiver- Transmitters 10KW-25KW	<u>1</u>	<u>51.69</u>	<u>51.69</u>
25	.01-900THz Receivers- Transmitters	<u>          </u>	<u>5.90</u>	<u>          </u>
26	Crypto equipment	<u>3</u>	<u>3.03</u>	<u>9.09</u>
ANNUAL DIRECT WORK (PRIMARY INVENTORY/OPERATIONAL EQUIPMENT):				<u>635.79</u>

\* Average direct maintenance person-hours required per item per year

3. Determine Travel Allocation. Prepare the Unit PM Site List and the unit coverage area map (see pages 4-15 and 4-16). In the example, ESMT Capital City is allowed 1,231.36 person-hours for unit travel. Calculations are as follows:

Exhibit 4-3 (Cont'd)

Sample Unit Most Efficient PM Travel Tabulation Chart

<u>Line</u>	<u>PM Trip Category</u>	<u>Trips/Year</u>	<u>Hours/Trip</u>	<u>Total Hrs/Yr</u>
A	Weekly (W)	28	<u>2.00</u>	<u>56.00</u>
B	W + SM	12	<u>6.75</u>	<u>81.00</u>
C	W + SM + M	8	<u>12.00</u>	<u>96.00</u>
D	W + SM + M + Q	2	<u>14.00</u>	<u>28.00</u>
E	W + SM + M + Q + S	1	<u>14.00</u>	<u>14.00</u>
F	W + SM + M + Q + S + A	1	<u>21.00</u>	<u>21.00</u>
TOTAL (Most Efficient PM-Related Travel/Year):				<u>296.00</u>

To determine the total person-hours allocated to the unit for all travel, multiply the above value by M (M = 4.16):

296.00 x 4.16 = 1.231.36 (unit travel allocation in person-hours)

Exhibit 4-3 (Cont'd)

Unit: ES Capital City

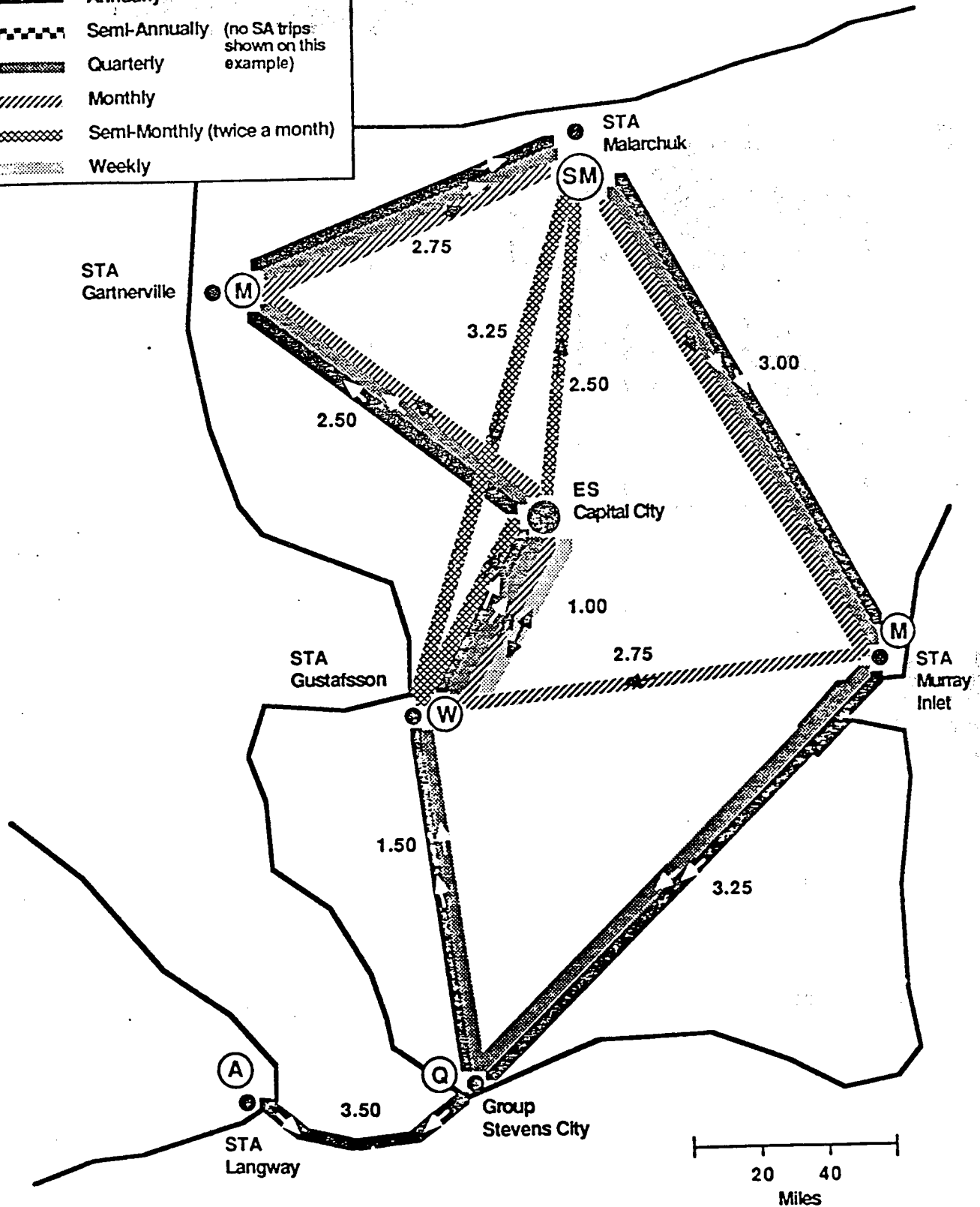
UNIT PREVENTIVE MAINTENANCE SITE LIST

<u>Name/Location</u>	<u>"PM Driver" Equipment Type</u>	<u>Brief Description of PM Performed</u>	<u>Method of Travel</u>	<u>Freq. (W, SM, Q, SA, or A)</u>
1. <u>STA Langway</u>	<u>CDWQ-NX-40008D Radio Beacon</u>	<u>Check frequencies</u>	<u>boat (4i)</u>	<u>A</u>
2. <u>STA Gartnerville</u>	<u>AN/SPS-66A Radar</u>	<u>Clean/inspect antenna assy.</u>	<u>motor vehicle</u>	<u>M</u>
3. <u>CGC Pt. Gould at STA Gustafsson</u>	<u>AN/URC-114 Transceiver</u>	<u>Test transceiver</u>	<u>"</u>	<u>W</u>
4. <u>STA Murray Inlet</u>	<u>Whip Antennas</u>	<u>Clean/inspect/lube</u>	<u>"</u>	<u>M</u>
5. <u>CGC Cape Ridley at Group Stevens City</u>	<u>AN/SPS-64 Radar</u>	<u>Measure mtr parameters</u>	<u>"</u>	<u>Q</u>
6. <u>CGC Cape Peters at STA Malarchuk</u>	<u>AN/WSC-3 Transceiver</u>	<u>Clean filters</u>	<u>"</u>	<u>SM</u>
7. _____	_____	_____	_____	_____
8. _____	_____	_____	_____	_____
9. _____	_____	_____	_____	_____
10. _____	_____	_____	_____	_____
11. _____	_____	_____	_____	_____
12. _____	_____	_____	_____	_____
13. _____	_____	_____	_____	_____
14. _____	_____	_____	_____	_____
15. _____	_____	_____	_____	_____
16. _____	_____	_____	_____	_____

(use photocopy of this page if more space required)

# ES Capital City

	Annually
	Semi-Annually (no SA trips shown on this example)
	Quarterly
	Monthly
	Semi-Monthly (twice a month)
	Weekly



Note: Unit personnel should complete map using different colors to indicate PM routes

4. Determine Total Annual Unit Work. Total annual ET work for ESMT Capital City is calculated as follows:

Sample Unit Tabulation of Total Unit Work

<u>Item</u>	<u>Work Category</u>	<u>Source</u>	<u>Hours/Year</u>
1	Direct/Primary Inventory	Exhibit 4-3	<u>635.79</u>
2	Direct/Miscellaneous	Item 1 x 13.0%	<u>82.65</u>
3	Direct/Non-Inventory	Item 1 x 10.8%	<u>68.67</u>
4	Total Direct Work	Items 1 + 2 + 3	<u>787.11</u>
5	Direct Travel	Exhibit 4-3	<u>1,231.36</u>
6	Indirect Work	Item 4 x 213.8%	<u>1,682.84</u>
7	Total Unit Work	Items 4 + 5 + 6	<u>3,701.31</u>

5. Determine Fractional (Decimal Number) Billet Allocation. The number of ET billets is determined by dividing Total Unit Work by 1,384. For example, the total number of billets for ES Capital City is determined as follows:  $3,701.31/1,384 = 2.6744$
6. Determine Whole Number of Billets. The fraction 2.6744 is rounded up to 3.0 in accordance with Chapter 1. Total required billets for ES Capital City is 3 ETs.
7. Determine Unit Rate Structure. The rate structure at ES Capital City is determined from Figure 4-1. For 3 ETs, the grade distribution is: 1 - E6; 1 - E5; 1 - E4.

Exhibit 4-3 (Cont'd)

#### 4.B. Electronic Shop - Telephone

1. Description. Telephone Technicians (TTs) are maintainers and installers of telecommunications equipment, including data systems, carrier and microwave systems, telephone systems, public address systems, power and telephone lines, miscellaneous shore station and vessel interior communications systems, antennas, and towers. On shore-based units, TTs generally work a 5-day regular work week (day work), plus serve as on-call technicians. This chapter provides a staffing standard for the following shore-based unit types where TTs maintain equipment:
  - a. Electronic Shops Telephone (ESTs)  
and Electronic Shops Minor Telephone (ESMTs)
  - b. Groups/Bases/Support Centers
  - c. Communications Area Master Stations (CAMS)
  - d. Communications Stations (COMMSTAs)
2. Standards Development.
  - a. General TT Standard. The fundamental formula for billet determination is:  $\text{work content} / \text{availability} = \text{number of billets}$ . Availability includes all direct work, direct travel, and indirect work. Military overhead, and TAD away from the unit are not part of available work time. Coast Guard standard availability for dayworkers is 1,384 hours per year. "Work Content" consists of all TT direct and indirect work. The current formulation divides direct and indirect work into five categories:
    - (1) Direct Work/Primary Inventory Items -- maintenance on 21 primary operational equipment types listed and counted in the unit's equipment inventory.
    - (2) Direct work/Miscellaneous Inventory -- maintenance on other miscellaneous operational equipment types listed in the unit's equipment inventory.
    - (3) Direct work/Non-Inventory -- direct maintenance on operational equipment not listed in the unit's equipment inventory.
    - (4) Direct Travel -- travel associated with all direct maintenance.
    - (5) Indirect Work -- other TT technical tasks and duties, including general shop work, general supply/inventory, work on test equipment, general supervision, etc.



4.B.2.b. TT Unit Travel Analysis. Travel to equipment installation sites represents a significant and variable unit workload factor. The staffing standard includes a method of estimating required TT travel. so that an allocation can be factored into the unit billet allocation.

c. Final TT Staffing Formulation. Total Unit Work/1,384 = Number of Billets.

d. Grade Distribution Pyramid. The unit grade distribution is shown in Figure 4-4 below:

<u>TT Unit Grade Distribution</u>						
<u>Unit Billets</u>	<u>TTCM</u> <u>(E-9)</u>	<u>TTCS</u> <u>(E-8)</u>	<u>TTC</u> <u>(E-7)</u>	<u>TT1</u> <u>(E-6)</u>	<u>TT2</u> <u>(E-5)</u>	<u>TT3</u> <u>(E-4)</u>
1 (Independent duty, removed from Tech Support)				1		
1 (attached with Tech Support)					1	
2 (Independent duty, removed from tech support)				1	1	
2 (attached with Tech Support)				1		1
3				1	1	1
4 (Independent duty, removed from Tech Support)			1	1	1	1
4 (attached with Tech Support)				1	2	1
5			1	1	2	1
6			1	1	2	2
7			1	1	2	3
8			1	2	2	3
9		1	1	2	2	3
10		1	1	2	2	4
11		1	1	2	3	4
12		1	1	3	3	4
13		1	1	3	4	4
14		1	1	3	4	5
15		1	1	4	4	5
16		1	1	4	4	6
17		1	1	4	5	6
18		1	2	4	5	6
19		1	2	4	5	7
20		1	2	5	5	7

Figure 4-4

3. Staffing Calculations. The general staffing calculation procedure is:

a. Determine Unit Direct Work/Primary Inventory Items. Determine the number of hours per year of direct work (excluding travel) required at each unit based on the primary unit equipment inventory. Exhibit 4-4

4.B.3.a. (Cont'd) provides the detailed primary equipment inventory cluster list with the coefficient for each cluster.

- b. Add Other Direct and Indirect Work Allocations. After the total annual Direct/Primary Inventory Item work hours are determined, there are proportional allocations for Direct/Miscellaneous, Direct/ Non-Inventory, and Indirect work.
- c. Determine Travel Allocation. The allocation for Direct Travel to remote job sites is based on the geographic layout of the unit coverage area. Exhibit 4-5 is used to determine travel time allocation. See Exhibit 4-2, Chapter 4-A for complete instructions.
- d. Complete Summary Chart to Determine Total Unit Work. Determine the annual Total Unit work as shown in Figure 4-5.

Tabulation of Total Unit work

<u>Item</u>	<u>Work Category</u>	<u>Source</u>	<u>Hours/Year</u>
1	Direct/Primary Inventory	Unit Direct Work Tabulation Worksheet (See example: Exhibit 4-6)	
2	Direct/Miscellaneous	Item 1 x 4.96%	
3	Direct/Non-Inventory	Item 1 x 15.7%	
4	Total Direct Work	Items 1 + 2 + 3	
5	Direct Travel	Unit Travel Time Allocation Worksheet (Exhibit 4-5)	
6	Indirect Work	Item 4 x 120.7%	
7	Total Unit Work	Item 4 + 5 + 6	

Figure 4-5

- e. Determine Fractional (Decimal Number) Billet Allocation. Divide the total unit work by 1,384 hours (annual availability time).
- f. Determine Whole Number of Billets. The required whole number of billets is derived based on the staffing standards guidelines for rounding (para. 1-E.2.d).
- g. Determine Grade Distribution. The grade distribution for each possible number of TT billets at shore-based units is shown in Figure 4-4.

# TT Equipment Inventory Clusters and Associated Direct Work Allocations

#	Equipment Cluster Description	MPH*
1	TELETYPE CORPORATION MODEL 40 TELETYPES: Unit of Measurement: # of teletypes	34.11
2	OTHER TELETYPE AND DATA TERMINAL EQUIPMENT: Unit of Measurement: # of teletypes/data terminals. All other teletypes, regardless of manufacturer, model, configuration, modification. or baud rate: a. Teletype Corporation Models: 28, 32, 35, 42, 43, etc. b. Texas Instruments Models: 732, 733, etc. c. Racal Milgo, etc.	7.80
3	MODEMS, DEMODULATORS, KEYERS, ELECTRONIC STUNT BOXES, PATCH PANELS, TONE PACKS, CARRIERS SYSTEMS, ETC.: Unit of Measurement: # of units. All modems, demodulators, keyers, patch panels, electronic stunt boxes, etc., used in conjunction with teletypes and data terminal equipment for transferring data and teletype information: a. Modems: Dataphone, Western Electric, Rixon, Racal Milgo, Codex, etc. b. Demodulators: Frederick Electronic Corp. 1200A, etc. c. Keyers: TM Systems, etc. d. Stunt Boxes: PULSECOM 440-2, etc. e. Patch Panels: PPCC-26, SB-1203, SB-1210, etc. f. Tone Packs: RFL, WESCOM, PULSECOM, SECODE, MOORE, etc. g. Carrier Equipments: KELLOG, ITT, etc.	4.32
4	POINT-TO-POINT RADIO LINK TERMINALS: Unit of Measurement: # of terminals (NOTE: an operational/hot standby unit combination is counted as one terminal). All microwave and point-to-point radio equipment and any ancillary equipment: GRANGER, etc. Excluded are Heliac or Co-Axial Transmission lines, antennas, and antenna-support-towers or poles (see Clusters 18 and 19).	45.48
5	PPX, EPBX, EAPBX. AND ELECTRONIC KEY TELEPHONE SYSTEMS HAVING 1-30 TELEPHONE INSTRUMENTS: Unit of Measurement: # of systems. PBX, EPBX, EAPBX, and electronic key telephone systems having between 1 and 30 telephone instruments, with no regard to equipment manufacturer, model, or configuration. Includes all the equipment incorporated into the system; i.e., the switchboard equipment, voltage regulator or UPS equipment, operator's consoles, telephone instruments, cabling, terminal blocks, and miscellaneous hardware. Excluded are autodialers, speakerphones and telephone answering machines unless these features are "built-in" to the existing instruments or PBX, EPBX, EAPBX, or key system (see Cluster 11).	105.57

\* Average direct maintenance person-hours required per item per year.

Exhibit 4-4

#	Equipment Cluster Description (Cont'd)	MPH
6	PPX, EPBX, EAPBX, AND ELECTRONIC KEY TELEPHONE SYSTEMS HAVING 31-80 TELEPHONE INSTRUMENTS: Unit of Measurement: # of systems PBX, EPBX, EAPBX, and electronic key telephone systems having between 31 and 80 telephone instruments, with no regard to equipment manufacturer, model or configuration. Includes all the equipment incorporated into the system; i.e., the switchboard equipment, voltage regulator or UPS equipment, operator's consoles, telephone instruments, cabling, terminal blocks and miscellaneous hardware. Excluded are autodialers, speakerphones, and telephone answering machines unless these features are "built-in" to the existing instruments or PBX, EPBX, EAPBX, or key system (see Cluster 11).	143.15
7	PBX, EPBX, EAPBX, AND ELECTRONIC KEY TELEPHONE SYSTEMS HAVING 81-250 TELEPHONE INSTRUMENTS: Unit of Measurement: # of systems. PBX, EPBX, EAPBX, and electronic key telephone systems having between 81 and 250 telephone instruments, with no regard to equipment manufacturer, model, or configuration. Includes all the equipment incorporated into the system; i.e., the switchboard equipment, voltage regulator or UPS equipment, operator's consoles, telephone instruments, cabling, terminal blocks and miscellaneous hardware. Excluded are autodialers, speakerphones, and telephone answering machines unless these features are "built-in" to the existing instruments or PBX, EPBX, EAPBX, or key system (see Cluster 11).	231.75
8	PBX, EPBX, EAPBX, AND ELECTRONIC KEY TELEPHONE SYSTEMS HAVING 251 OR MORE TELEPHONE INSTRUMENTS: Unit of Measurement: # of systems and exact size of each PBX, EPBX, EAPBX, and electronic key telephone systems having 251 or more telephone instruments regardless of equipment manufacturer, model, or configuration. Includes all the equipment incorporated into the system; i.e., the switchboard equipment, voltage regulator or UPS equipment, operator's consoles, telephone instruments, cabling, terminal blocks and miscellaneous hardware. Excluded are autodialers, speakerphones, and telephone answering machines unless these features are "built-in" to the existing instruments or PBX, EPBX, EAPBX, or key system (see Cluster 11).	Derived**

\*\* The MPH allocations for Cluster 8 are determined individually for units based on the exact number of instruments in their system(s). For staffing purposes, large systems are considered to be a combination of smaller systems as defined in Clusters 5, 6, and 7. Units with Cluster 8 systems are allocated MPH/year based on the smallest possible combination of Cluster 5, 6, and 7 MPH/item/year values to cover the number of instruments in their systems. Example 1: A system with 275 instruments would be considered as 250 + 25. The resulting MPH allocation would be 231.75 + 105.57 = 331.32. Example 2: A system with 575 instruments would be considered as 250 + 250 + 75. The resulting MPH allocation would be 231.75 + 231.75 + 143.15 = 606.65 MPH/year.

#	Equipment Cluster Description (Cont'd)	MPH
9	1A2 KEY TELEPHONE SYSTEMS "NON-ELECTRONIC" HAVING 1-20 PHONES: Unit of Measurement: # of systems. Non-electronic 1A2 key telephone systems having between 1 and 20 telephone instruments. "Instruments" means total phones (single or multi-line) connected to the key system. Includes all equipment incorporated into the system; i.e., key service unit, power supplies, KTU modules, telephone sets, cabling, terminal blocks, and miscellaneous hardware. Excluded are autodialers, speakerphones, and telephone answering machines unless these features are "built-in" to the existing features of PBX, EPEX, EAPEX, or key system (see Cluster 11).	34.91
10	1A2 KEY TELEPHONE SYSTEMS "NON-ELECTRONIC" HAVING 21 OR MORE PHONES: Unit of Measurement: # of systems. Non-electronic 1A2 key telephone systems having 21 or more telephone instruments. "Instruments" means total phones (single or multi-line) connected to the key system. Includes all equipment incorporated into the system; i.e., key service unit, power supplies, KTU modules, telephone sets, cabling, terminal blocks, and miscellaneous hardware. Excluded are autodialers, speakerphones, and telephone answering machines unless these features are "built-in" to the existing features of PBX, EPEX, EAPEX, or key system (see Cluster 11).	57.53
11	SEPARATE TELEPHONES; SPEAKERPHONES, AUTODIALERS, TELEPHONE ANSWERING MACHINES, ETC. (INSTRUMENTS NOT PART OF ANOTHER CLUSTER): Unit of Measurement: # of instruments/units. Telephone systems (including associated in-house wiring) where maintenance responsibility is limited to only the telephone instruments. These systems either do not require a PBX or key system or the PBX/key system is maintained by others. Ancillary devices not "built-into" PBX, EPEX, EAPEX, electronic key systems, 1A2 key systems, and telephone instruments accounted for in other clusters.	3.06
12	PUBLIC ADDRESS (PAGING) SYSTEMS HAVING BETWEEN 1 AND 30 SPEAKERS: Unit of Measurement: # of PA systems. Includes all equipment incorporated into the system; i.e., tone generators, microphones, pre-amps, power amps, compression amps, limiters, power supplies, zoning relays, speakers, cabling, terminals, and other miscellaneous hardware.	13.33
13	PUBLIC ADDRESS (PAGING) SYSTEMS HAVING 31 OR MORE SPEAKERS: Unit of Measurement: # of PA systems. Includes all the equipment incorporated into the system; i.e., tone generators, microphones, pre-amps, power amps, compression amps, limiters, power supplies, zoning relays, speakers, cabling, terminals, and other miscellaneous hardware.	17.23

Exhibit 4-4 (Cont'd)

#	Equipment Cluster Description	MPH
14	MISC. SHORE STATION AND VESSEL INTERIOR COMMUNICATION SYSTEMS: Unit of Measurement: # of systems (e.g., each intercom system, each fire alarm system, each intrusion alarm system, etc.). Intercom systems, fire alarm systems, SAR alarm systems, intrusion alarm systems, small boat remotod bilge alarm systems, sound powered telephone systems, shipboard alarm systems, and other miscellaneous communication and alarm systems. "Catch-all" cluster accounting for other interior communication and alarm systems supported. Excluded are those items reported under any other cluster.	2.28
15	OVERHEAD POWER AND TELEPHONE LINES: Unit of Measurement: # of thousands of feet of power/telephone line. All overhead (aerial) power and telephone lines. Includes all open wire and aerial cable telephone lines and all open wire and triplex power lines.	16.19
16	UNDERWATER POWER AND TELEPHONE CABLE: Two units of measurement: Unit of Measurement: (Subfactor A) # of thousands of feet of cable; Unit of Measurement: (Subfactor B) # of cables. All underwater (submarine) power, telephone, and control cable. NOTE: <u>Total</u> unit inventory credited <u>twice</u> : once in terms of Subfactor A and once in terms of Subfactor B.	0.83 2.56
17	UNDERGROUND POWER AND TELEPHONE CABLE: Unit of Measurement: # of thousands of feet of cable. All underground power and telephone cables. Do not include underground cable associated with telephone/PA systems accounted for in previous clusters.	4.31
18.	ANTENNAS: Unit of Measurement: # of antennas. All radio and microwave antennas. This would include any antenna not counted as a tower. Tower antennas should be counted as a tower (see Clusters 20 and 21).	7.23
19.	TRANSMISSION LINES: Unit of Measurement: # of lines. All CO-AX and HELIAX transmission cables linking antennas to transceiver equipment not already included in a previous cluster.	3.52
20.	TOWERS: Unit of Measurement: # of towers. All antenna and antenna-support-towers or poles (regardless of height), including ground system. Include only those items not reported under Cluster 18. Includes wooden or metal, guyed and un-guyed structures. Do not include if maintenance consists of only servicing tower-mounted antennas and maintenance is not conducted on the supporting tower.	10.05

Exhibit 4-4 (Cont'd)

<u>#</u>	<u>Equipment Cluster Description (Cont'd)</u>	<u>MPH</u>
21	MULTI-CHANNEL TAPE RECORDERS: Unit of Measurement: # of tape recorders. Includes multi-channel tape recorders only, such as magnasync. Excludes other types of tape recorders.	5.30

MISCELLANEOUS (see page 4-32, Item 2): The miscellaneous category includes equipment items not included in any of the 21 primary equipment clusters. Miscellaneous equipment items are not counted individually; a standard supplemental allocation of 4.96% of primary equipment item direct work is provided by Item 2 of the Staffing Standard (page 4-32). The following list contains examples of equipment items considered miscellaneous (i.e., NOT counted in any of the primary equipment clusters):

- Teletype net
- SAR/TEL
- FTS lines
- District tie line
- Autovon circuit
- 07GD66750
- NEDH BDY Comms Console
- CUD-1100
- CEHM-RCM-801
- CSV-260-6X1P

Exhibit 4-4 (Cont'd)

## Instructions for Completing Unit Travel Time Allocation Form

1. List PM Sites. On the PM site list, list all sites located more than 15 minutes (0.25 hours) from the unit requiring scheduled PM. Do not include PM performed by non-TTs or contractors. Do not include non-PM work sites. If any two maintenance locations are less than 10 minutes apart from each other, they should be considered as part of the same site. For each site, state:

- The site name and location.
- The "PM Driver"/Equipment Type. Each site can have only one PM Driver (i.e., the equipment item at that site that requires the most frequent PM).
- Brief Description of the PM performed (e.g., clean, adjust, lubricate, check voltage).
- Method of Travel. (To and from the site).
- Frequency of PM at the site. Classify as one of five categories: Weekly (W), Monthly (M), Quarterly (Q), Semi-Annually (SA), or Annually (A). If the PM schedule for a site is not exactly one of these five, choose the closest category.

2. Map PM Sites. Using a copy of a map of the unit TT coverage area (e.g., a photocopy of your office map), label each site, including the W, M, Q, SA, or A designations. Be sure that the map has a distance scale, and that it shows major roadways traveled. Indicate any sites that cannot be reached by motor vehicle or that otherwise represent difficult access points.

3. Estimate Travel Time for PM Circuit Trips ("Most-Efficient PM Travel"). Estimate the travel time in hours (e.g., 4.50) necessary to make one complete, continuous circuit trip to visit each site where PM is performed. This estimate should account for distance, speed limits, traffic density, and other similar routine factors. Label the map with the travel times between sites indicating the travel path necessary for a continuous circuit trip. Weekly (W), Monthly (M), Quarterly (Q), Semi-Annually (SA), and Annually (A) trips will be considered. (Enter as required for Lines A thru E below).

NOTE: Assume one TT traveling by usual travel mode. Include travel time only. Do not include time for performance of PM, overnight stays, lunch, breaks, or unanticipated delays (e.g., traffic jams, car trouble, missed connections).

Exhibit 4-5



4. Complete Travel Tabulation Chart.

Line A - Enter the travel time for (W) PM.  
 Line B - Enter the travel time for (W) and (M) PM.  
 Line C - Enter the travel time for (W), (M), and (Q) PM.  
 Line D - Enter the travel time for (W), (M), (O), and (SA) PM.  
 Line E - Enter the travel time for (W), (M), (Q), (SA) and (A) PM.

A. Multiply Column (3) Trips/Year by Column (4) Hours/Trip and enter amount in Column (5) Total Hrs/Yr.

B. Add Column (5) and enter total in Column (5) TOTAL (Estimated PM-Related Travel/Year).

Estimated PM Travel Tabulation Chart

<u>(1)</u> <u>Line</u>	<u>(2)</u> <u>Trip Category</u>	<u>(3)</u> <u>Trips/Year</u>	<u>(4)</u> <u>Hours/Trip</u>	<u>(5)</u> <u>Total Hrs/Yr</u>
A	Weekly (W)	40	x _____	= _____
B	W + M	8	x _____	= _____
C	W + M + O	2	x _____	= _____
D	W + M + Q + SA	1	x _____	= _____
E	W + M + Q + SA + A	1	x _____	= _____
TOTAL (Most Efficient PM-Related Travel/Year)				= _____

5. Estimate Total Travel Required. Multiply Total Most-Efficient PM-Related Travel/Year by 8.51 to determine the total person-hours allocated to the unit for all travel.

\_\_\_\_\_ x 8.51 = \_\_\_\_\_ Direct Travel

6. Enter Total Unit Travel on Item 5, Direct Travel (Figure 4-6).

NOTE: The multiplier 8.51 was derived from the TT Staffing Study.

Exhibit 4-5 (Cont'd)

### Sample Staffing Calculations

1. Hypothetical unit ESMT Capital City has the following inventory. The ESMT needs 3 TTs to support this work. The equipment is:

#### Equipment

#### Location

Granger Microwave Link  
Multi-Channel Tape Recorder  
Model 40 TTY  
Model 43 TTY  
MITEL SX20-Tele Syst  
Telephone System  
Tower  
Underwater Cable (5000 ft.)

Between Langway/Millerville  
AIRSTA Cape Ridley  
Sta Gartnerville  
Sta Gustafsson Bay  
Sta Murray Inlet  
Group Stevens City, WLB-180  
Sta Malarchak Tower  
Murphy Island

2. Determine Direct Work/Primary Inventory Items. Exhibit 4-6 shows the completed direct work tabulation sheet for ESMT Capital City:

Sample Unit Direct Work/Primary Equipment Items Tabulation Worksheet

#	# Items in Equipment Cluster Description	Unit Inv.	Total Work	
			MMH*	(Hrs/Year)
1	Model 40 Teletypes	<u>1</u>	<u>34.11</u>	<u>34.11</u>
2	Other Teletype Equipment	<u>1</u>	<u>7.80</u>	<u>7.80</u>
3	Modems, demodulators, keyers, electronic stunt boxes, patch panels, tone packs, carrier systems		<u>4.32</u>	
4	Microwave systems	<u>4</u>	<u>45.48</u>	<u>181.92</u>
5	PEX(etc.) systems w/ 1-30 instruments	<u>1</u>	<u>105.57</u>	<u>105.57</u>
6	PEX(etc.) sys. w/ 31-80 instruments		<u>143.15</u>	
7	PEX(etc.) sys. w/ 81-250 instruments		<u>231.75</u>	
8	PEX(etc.) sys. w/ 251+ instruments		<u>**</u>	
9	1A2 key telephone systems "non- electronic" w/ 1-20 phones		<u>34.91</u>	
10	1A2 key telephone systems "non- electronic" w/ 21+ phones		<u>57.53</u>	
11	Telephone systems w/ only telephone instruments; and speakerphones, autodialers, answering machines, etc.		<u>3.06</u>	
12	PA systems w/ 1-30 speakers		<u>13.33</u>	
13	PA systems w/ 31+ speakers		<u>17.23</u>	
14	Misc. shore station interior communication systems	<u>1</u>	<u>2.28</u>	<u>2.28</u>
15	Overhead power and telephone lines		<u>16.19</u>	

\* Average direct maintenance man-hours required per item per year

\*\* For Cluster 8, MPH/year value derived based on exact size of system. See Exhibit 4-4.

Exhibit 4-6 (Cont'd)

Sample Unit Direct Work/Primary Equipment Items Tabulation  
Worksheet

<u>#</u>	<u>Equipment Cluster Description</u>	<u># Items in Unit Inv.</u>	<u>MMH</u>	<u>Total Work (Hrs/Year)</u>
16	Underwater power and telephone cable			
	Subfactor A: Unit of measurement - # of thousands of feet of cable	<u>5</u>	<u>0.83</u>	<u>4.15</u>
	Subfactor B: Unit of measurement - # of cables	<u>1</u>	<u>2.56</u>	<u>2.56</u>
Note: <u>Total</u> unit underwater cable inventory credited <u>twice</u> ; once in terms of Subfactor A and once in terms of Subfactor B.				
17	Underground power and telephone cable		<u>4.31</u>	
18	Antennas		<u>7.23</u>	
19	Transmission lines		<u>3.52</u>	
20	Towers	<u>1</u>	<u>10.05</u>	<u>10.05</u>
21	Magnasync tape recorders	<u>1</u>	<u>5.30</u>	<u>5.30</u>
ANNUAL DIRECT WORK (PRIMARY INVENTORY/OPERATIONAL EQUIPMENT):				<u>353.74</u>

NOTE: Total unit underwater cable inventory credited twice; once in terms of Subfactor A and once in terms of Subfactor B.

3. Determine Travel Allocation. Prepare the Unit PM Site List and the unit coverage area map. In the example, ESMT Capital City is allowed 2,161.54 person-hours for unit travel. Calculations are as follows:

Sample Unit Most Efficient PM Travel Tabulation Chart

<u>Line</u>	<u>PM Trip Category</u>	<u>Trips/Year</u>	<u>Hours/Trip</u>	<u>Total Hrs/Yr</u>
A	Weekly (W)	40	<u>4.00</u>	<u>160.00</u>
B	W + M	8	<u>6.50</u>	<u>52.00</u>
C	W + M + Q	2	<u>9.00</u>	<u>18.00</u>
D	W + M + Q + SA	1	<u>9.50</u>	<u>9.50</u>
E	W + M + Q + SA + A	1	<u>14.50</u>	<u>14.50</u>
TOTAL (Most Efficient PM-Related Travel/Year):				<u>254.00</u>

To determine the total person-hours allocated to the unit for all travel, multiply the above value by M (M = 8.51):

$$\underline{254.00} \times 8.51 = \underline{2,161.54} \text{ (unit travel allocation in person-hours)}$$

4. Determine Total Annual Unit Work. Total annual TT work for ESMT Capital City is calculated as follows:

Sample Unit Tabulation of Total Unit Work

<u>Item</u>	<u>Work Category</u>	<u>Source</u>	<u>Hours/Year</u>
1	Direct/Primary Inventory	Exhibit 4-6	<u>353.74</u>
2	Direct/Miscellaneous	Item 1 x 4.96%	<u>17.55</u>
3	Direct/Non-Inventory	Item 1 x 15.7%	<u>55.54</u>
4	Total Direct Work	Items 1 + 2 + 3	<u>426.83</u>
5	Direct Travel	Exhibit 4-6	<u>2,161.54</u>
6	Indirect Work	Item 4 x 120.7%	<u>515.18</u>
7	Total Unit work	Items 4 + 5 + 6	<u>3,103.55</u>

- e. Determine Fractional (Decimal Number) Billet Allocation. The number of TT billets is determined by dividing Total Unit Work by 1,384. For example, the total number of billets for ESMT Capital City is determined as follows:  $3,103.55/1,384 = 2.2424$ .
- f. Determine Whole Number of Billets. The fraction 2.2424 is rounded up to 3.0 in accordance with Chapter 1. Total required billets for ESMT Capital City is 3 TTs.
- g. Determine Unit Rate Structure. The rate structure at ESMT Capital City is determined from Figure 4-4. For 3 TTs the grade distribution is: 1 - E6; 1 - E5; 1 - E4.

**SECTION C**  
**SUPPORT CENTERS**  
**(To be developed)**

**SECTION D**  
**SUPPLY CENTERS**  
**(To be developed)**



**SECTION E**  
**BASES/DEPOTS**  
**(To be developed)**

**SECTION F**  
**PERSONNEL REPORTING UNITS**  
**(To be developed)**

#### 4.G. Dining Facilities - Subsistence Specialist Billets.

1. Introduction. Specific staffing levels for this section were developed by identifying the different tasks which are performed by subsistence specialist in a properly operated food service facility. These tasks make up a work unit structure that supports the final output, which is the operation of a Coast Guard Dining Facility (CGDF). Work unit structures were developed for various-size units which ranged from supporting 15 to 540 personnel. Each task was assigned a standard time through professional estimates and verified by interviews and observations at large, medium and small shore units and cutters. The summation of these standard times was divided by the standard time available in the workweek to derive the number of subsistence specialist billets needed to support a specific number of personnel.
2. Definition. Subsistence Specialists prepare foods using the Armed Forces Recipe Service (AFRS) or other approved recipes, operate food service equipment, and maintain sanitary food service, preparation, and storage areas. In addition to receiving and storing subsistence items and supplies, subsistence specialists maintain appropriate stock levels of those items. They prepare nutritionally balanced menus utilizing the basic four food groups, supervise the setting of tables and service of food, make seating arrangements in wardroom dining facilities, and plan official food service functions; maintain proper operating statements and accounting records and supervise lower ranked non-rated/SS personnel assigned to food service/preparation areas. They perform subsistence tasks as assigned and tasks in flag officers' quarters when specifically authorized by the Commandant. After training/experience, SS personnel may perform duties as chef, baker, cashier, assistant to the Exchange/NAFA Officer, food service officer, assistant supply officer, subsistence advisory team member or alternative messing manager.
3. Standard. Figure 4-6 provides both the number and grade structure of subsistence specialists for units with or without separate wardroom dining facilities (WDF) and commanding officer dining facility (CODF). In Figure 4-6 the entering argument is the number of personnel authorized to subsist. For floating units this number will be equal to the unit's enlisted personnel allowance. For shore units this number equates to 75% of the personnel authorized to subsist at the Coast Guard Dining Facility. This percentage should include all other units supported with food service (see Exhibit 4-8). Where no alternative messing is available, staffing will be computed based on 100% of the personnel authorized to subsist.

SUBSISTENCE SPECIALISTS STANDARDS							
PERSONNEL AUTHORIZED TO SUBSIST:	E-9	E-8	E-7	E-6	E-5	E-4	TOTAL SS
1 - 19					1		1
20 - 30				1		1	2
31 - 45				1	1	1	3
46 - 60				1	1	2	4
61 - 90			1	1	1	2	5
91 - 120			1	1	1	3	6
121 - 150			1	1	2	3	7
151 - 180			1	1	2	4	8
181 - 240			1	2	2	4	9
241 - 300		1		2	2	5	10
301 - 360		1		2	3	5	11
361 - 420		1		2	3	6	12
421 - 540		1	1	2	3	6	13
541 - 660		1	1	2	4	6	14
661 - 780		1	1	3	4	6	15
781 - 900	1		1	3	4	7	16
901 - 1020	1		1	3	4	8	17
1021 - 1140	1		1	3	5	8	18
TWO ADDITIONAL SS FOR WARDROOM'S DINING FACILITY ON WHECS OR WAGB'S ONLY							
ONE ADDITIONAL SS FOR CO'S DINING FACILITY ON WHEC'S OR WAGB'S ONLY							

Figure 4-6

USCGC HAMILTON:

Enlisted Personnel Allowance =	143
(Enter Figure 4-6 at the 121 to 150 range)	
Total SS staffing authorized =	7
Add 3 SS for (WDF) and (CODF)	+ 3
Total SS staffing authorized for USCGC HAMILTON =	10 SS billets

The SS rate structure for USCGC HAMILTON is given in Figure 4-6 in the row which equals a total SS staffing of 10. Staffing is: E-8, E-6(2), E-5(2), E-4(5).

Exhibit 4-7

Support Center Alameda:

Personnel Authorized to subsist at (CGDF) Support Center Alameda..... 126

\*Units supported:

Group San Francisco.....	38
12th District Office.....	144
ANT San Francisco.....	7
VTs San Francisco.....	19
COMSTA San Francisco.....	87
MSO San Francisco.....	+ 34
	455

Total:

75% of 455 = 341

(Enter Figure 4-6 at the 301 to 360 range)

Total SS staffing authorized for SUPRTCEN = 11 SS billets

The SS rate structure for SUPRTCEN Alameda is given in Figure 4-6 in the row which equals a total SS staffing of 11.

\* An assumption is made that these units are supported with food service by the SUPRTCEN for example purposes only.

These standards are only applicable to subsistence specialists assigned to Coast Guard Dining Facilities. Additional SS billets may be assigned to units with full time NAFA activities.

Exhibit 4-8

#### 4.H. Dining Facilities - Mess Attendant Staffing.

1. Definition. Mess attendants are non-rated enlisted personnel assigned on a full time basis to facilitate the operation of a Coast Guard Dining Facility (CGDF), Wardroom Dining Facility (WDF) and Commanding Officer Dining Facility (CODF).

- a. Description of duties.

- (1) Food Preparation; prepares fruits or vegetables for cooking or serving, serves food, prepares hot or cold drinks, maintains adequate level in milk dispenser, loads and unloads food from delivery vehicle at dining facility or unit.
    - (2) Dining Facility Maintenance; prepares dining area, assists in drawing supplies, cleans dining and food preparation areas, cleans equipment, clears tables, operates dishwasher and disposes of garbage.
    - (3) Provides bed making service when assigned to a wardroom dining facility for the commanding officer, executive officer and officers in the grade of O-5 and above or their equivalents. Completes any other assigned duties in support of wardroom or Coast Guard dining facilities.

2. Standards. The mess attendant standard is based on analysis of all unit types afloat and ashore. This standard has been updated to reflect current Coast Guard policies. Consideration has been given to the existing staffing levels at each unit type based on the "average" unit. Figure 4-7 provides the number of mess attendants for all units to support the CGDF, WDF and CODF. In Figure 4-7 the entering argument is the number of personnel authorized to subsist. For floating units this number will be equal to the unit's military personnel allowance. For shore units this number equates to 75% of the personnel authorized to subsist at the Coast Guard Dining Facility. This percentage should include all other units supported with food service (see Exhibit 4-10). Staffing for unaccompanied isolated duty stations, where no alternative messing is available, will be computed based on 100% of the personnel authorized to subsist. Depending on CGDF use, the standard will not necessarily apply equally to every shore unit. Requirements which vary from the standards must be evaluated on an individual basis. Units that fall into the first staffing increment (1 - 18) in Figure 4-7 are recognized as having mess attendant duties

- 4.H.2. (Cont'd) which do not equal a full time billet. According to a Coast Guard-wide mess attendant survey, units with workload that does not equal a full time billet have been accomplishing mess attendant duties with non-rated personnel used part time which are taken from the unit's work force or duty section.

MESS ATTENDANT STANDARDS	
PERSONNEL AUTHORIZED TO SUBSIST:	TOTAL MESS ATTENDANTS
1 - 18	0
19 - 37	1
38 - 52	2
53 - 75	3
76 - 105	4
106 - 135	5
136 - 165	6
166 - 210	7
211 - 270	8
271 - 330	9
331 - 390	10
391 - 480	11
481 - 600	12
601 - 720	13
721 - 840	14
841 - 960	15
961 - 1080	16
1081 - 1200	17
ONE ADDITIONAL MESS ATTENDANT FOR WHEC, WMEC, AND WAGB.	

Figure 4-7

USCGC HAMILTON:

Military Personnel Allowance 158  
(Enter Figure 4-7 at the 136 to 166 range)  
Total = 6 Mess Attendant billets  
One additional mess attendant included for WHEC  
Total mess attendant staffing for USCGC HAMILTON = 7  
billets

Exhibit 4-9

Support Center Alameda:

Personnel Authorized to subsist at (CGDF) Support Center  
Alameda:..... 126

\*Units supported:

Group San Francisco..... 38  
12th District Office..... 144  
ANT San Francisco..... 7  
VTS San Francisco..... 19  
COMSTA San Francisco..... 87  
MSO San Francisco..... + 3

Total: 455

75% of 455 = 341

(Enter Figure 4-7 at the 331 to 390 range)

Total mess attendant staffing authorized for SUPCEN = 10  
billets

\* An assumption is made that only these units are supported  
with food service by the SUPCEN for example purposes.

Exhibit 4-10



4.I. Housing Support and Maintenance Billets.

1. The Coast Guard provides and maintains a number of family housing units for its personnel. Proper construction, equitable assignment procedures, adequate maintenance, and maximum utilization of family housing assets are all facets of the Coast Guard family housing program.
2. Definitions.
  - a. Area Coordinator. District commanders and commanding officers of Headquarters units responsible for conducting the Family Housing Program within their commands.
  - b. Area Housing Representative. The HAIL officer or Family Housing Officer authorized in support of area HAIL activities.
  - c. Housing Manager. The person directly responsible for carrying out the housing program within a command, including, but not limited to, providing housing referral services and supervising Coast Guard owned and leased housing in the unit's inventory.
  - d. HAIL Program. The mission of the HAIL Program (Housing Administration, Information and Liaison) is to provide a complete housing program on the District/Headquarters unit and operating unit level.
3. This chapter will establish staffing criteria for operation, maintenance, and management, and area representatives (HAIL) billets Criteria for district office staffs will be listed in chapter 3, Section C, District Office staffing.
4. Housing Project Staffs.
  - a. Operation & Maintenance Personnel. Such personnel are engaged in the operation of utilities and maintenance of housing projects under the supervision of the housing manager. They effect repairs to Coast Guard structures, equipment, furniture, and furnishings as required. These personnel will be programmed according to Figure 4-8. In all cases, operation and maintenance personnel are to be programmed when contract maintenance is not available or where an economic analysis

4.I.4.a. (Cont'd) demonstrates contract maintenance to be inadvisable in accordance with OMB circular A-76. When programming O&M personnel, Civil Engineering Manual, COMDINST M11000.11(series), should be used as a reference.

OPERATION & MAINTENANCE BILLETSS

Number of Units	MK/DC/EM							TOTAL
	E9	E8	E7	E6	E5	E4	E3/E2	
Under - 10	-	-	-	-	-	-	-	0
10 - 20	-	-	-	-	1	-	-	1
21 - 40	-	-	-	-	1	-	1	2
41 - 60	-	-	-	1	-	1	1	3
61 - 80	-	-	-	1	1	1	1	4
81 - 100	-	-	-	1	1	2	1	5
101 - 120	-	-	-	1	1	2	2	6
121 - 140	-	-	-	1	1	2	3	7
141 - 160	-	-	-	1	2	2	3	8
161 - 180	-	-	1	-	2	3	3	9
181 - 200	-	-	1	-	3	3	3	10

Note 1: Staffing for housing projects of more than 200 units will be determined by special studies.

Note 2: Civilian (Wage Grade) positions may be used in lieu of any number of comparable military billets.

Note 3: The standards above assume that some specialized maintenance services are available under contract or purchase order.

\*Contract personnel under OG 30 Funding are preferred.

Figure 4-8

4.I.4.b. Housing Manager. The housing manager is directly responsible to authority for his command for the on-site management of one or more housing projects, including the surrounding grounds and communal facilities. Responsibility customarily encompasses a majority of the following functions:

- (1) The administration of family housing, including the maintenance of accounts and records, the development and implementation of rules and regulations pertaining to occupancy responsibilities and recommending improvements in administrative policies.
- (2) The development and justification of annual family housing budgets and other requests for funds, preparation of financial reports, and control of the use of allocated family housing funds.
- (3) The development of statistical analyses to insure optimum utilization of available funds and provide maximum possible uniformity in standards of appearance, maintenance and habitability without overcommitment of available funds.
- (4) Liaison with the Maintenance and Logistics Command or Unit Public Works Officer to provide for necessary major maintenance and repair of family housing facilities and the evaluation of maintenance costs.
- (5) Establishment of guidelines to be observed by housing management personnel in their periodic inspection of family quarters, building grounds, roads and recreation areas for habitability, appearance, safety and economic use of energy, including the removal and replacement of equipment or furniture, compilation of data to disclose physical deficiencies or structural improvements required for inclusion in annual budget requests for the maintenance, repair, improvement, and operation of the housing project.

4.I.4.b.(6) Control and arrange for the repair, storage and distribution of equipment and furnishings and the programming of funds for their replacement.

(7) Development and implementation of approved policies for tenant relations to promote and sustain harmonious communal relations.

(8) Supervision and training of housing project personnel. For housing projects of 50 units or less, housing management normally shall be the responsibility of one of the assigned maintenance personnel or such other person as may be detailed. For projects having 50 so 150 units, a housing manager may be authorized. The ratio of one management billet per each additional 150 units shall apply thereafter. Clerical assistance may be authorized at the rate of one billet per each housing officer billet. These personnel will be programmed according to Figure 4-9.

c. Area Housing Representatives. The HAIL representatives are responsible for coordinating all aspects of the HAIL program as follows:

(1) Coordination of assignment to Coast Guard owned or leased housing.

(2) Conduct of a leased housing program.

(3) Establishment and operation of a locator/referral service, including military facilities, that can be utilized during the house hunting period.

(4) Locating reasonably priced transient accommodations, including military facilities, that can be utilized during the house hunting period.

(5) Liaison with local DOD services housing officials regarding common problems.

(6) Utilization of available DOD quarters by Coast Guard personnel when available.

(7) Acquisition, through transfer to Coast Guard control, of quarters found to be excess to the needs of DOD.

- 4.I.4.c.(8) Recommending new station or project housing construction within geographic area of responsibility.
- (9) Performing and reporting community support studies in conjunction with new construction or acquisition recommendations.
  - (10) Administration, monitoring, and control of all family housing surveys held in the area of responsibility in accordance with applicable instructions.
  - (11) Liaison with local area housing officials, including individual realtors, real estate boards, VA, FHA, and similar bodies.
  - (12) Inspection of housing offered for listing or Coast Guard lease to insure adequacy.
  - (13) HAIL representatives will generally be established in the Personnel Divisions of district staffs, at major Headquarters units and at large field installations. In addition, one housing referral billet is required for each area with a population of 75-150 families with additional billets provided for each additional 200 families.

# HOUSING MANAGER AND CLERICAL STAFFING

<u>Number of Units</u>	<u>CWO</u>	<u>POC</u>	<u>PO1</u>	<u>YN2</u>	<u>YN3</u>
0 - 50	-	-	-	-	-
50 - 150	-	1	-	-	1
150 - 300	-	1	1	1	-
300 - 450	1	-	2	1	1
450 - 600	1	-	3	1	2

Note: Equivalent civilian positions may be used in lieu of military billets.

Figure 4-9

**SECTION J**  
**FACILITY ENGINEERING AND PUBLIC WORKS**  
**(to be developed)**

#### 4.K. FIRE FIGHTERS.

##### 1. Introduction.

- a. At most Coast Guard shore installations, fire protection requirements are met by local community fire departments in conjunction with duty section personnel. Some units, however, may require dedicated positions to staff their own fire department on a full time basis due to such factors as the lack of local fire protection capability or isolation of the unit.
- b. The level of fire fighting service and the amount of equipment that will be manned will be authorized by the Commandant after review and analysis of the situation at the individual unit since no two shore units are exactly alike. The basic determinant of the number of full-time fire fighters will be the number and types of equipment that are determined to require immediate readiness and the positions that must be manned on each piece of equipment.

##### 2. Definitions.

- a. Fire Apparatus - vehicles equipped with fire fighting equipment.
- b. Pumper - a self-contained vehicle including a pump (usually 750 or 1000 gallons per minute), water tank and various hose carrying capabilities. The primary purpose is to extinguish structural fires.
- c. Aerial Ladder - a self-contained vehicle including a hydraulically or mechanically operated aerial ladder (usually 75', 85' or 100' long), ground ladders of various length, and other associated fire fighting equipment.
- d. MB5 - a type of aircraft crash-fire-rescue truck with a 1,500 gallon capacity.
- e. P4 - a type of aircraft crash-fire-rescue truck with a structural firefighting capability.
- f. PIO - a type of aircraft crash-fire-rescue truck.
- g. Twinned Agent Unit - a type of aircraft crash-fire-rescue truck.



4.K.3. Fire Crew Composition. The following crew composition table indicates billet/position titles and crew size for various equipment common to the Coast Guard.

Crew Composition Table

<u>Fire Apparatus Title</u>	<u>Crew Size</u>	<u>Billet/Position</u>
Twinned Agent Unit Operator	2	Driver/Nozzle Rescue Man
P10 Crash Truck Operator	2	Driver/Nozzle Rescue Man
P4 Crash Truck Operator	3	Driver/Turret Two Rescue Men
MB5 Crash Truck	4	Driver Turret Operator Two Rescue Men
750-1000 Gallon Pumper Operator	4	Driver/Pump Hydrant Hookup Two Hose Men
Man		
Aerial Ladder	4	Driver/Ladder Operator Three Ladder Men (one of these will man the tiller if required)

\*All General Schedule civilian fire fighters work a minimum of 144 hours every two weeks per agency policy. A sample fire fighter work schedule is attached at the end of this section to illustrate the average 72 hour week. The position multiplier is 2.7.

\*Cross training and manning of structural and crash-fire-rescue crews is encouraged.

4.K.4. Fire Chief. Each Coast Guard installation having fire fighting apparatus manned by dedicated fire fighter positions/billets will normally rate one fire chief billet/position for command and control. Assistant fire chiefs may be designated from among those persons filling other existing positions as desired.

5. Fire Prevention Inspectors and Communications Watchstanders. These billets/positions may be justified on an individual case basis and must be approved by the Commandant.

6. Staffing Calculation.

- a. Determine the fire apparatus for the unit.
- b. Determine which fire apparatus is to be fully crewed and which is to be designated spare.
- c. Determine the number of personnel for the fully crewed apparatus per the appropriate staffing table.
- d. If previously approved by the Commandant, add to the number of personnel determined in (c), the number of personnel for partially manned fire apparatus.
- e. If previously approved by the Commandant, add one communication watchstander to the total calculated in (c) and (d).
- f. Multiply the position multiplier times the sum of the personnel determined in steps (c), (d) and (e).
- g. Add one billet/position for fire chief.
- h. Add one fire prevention inspector billet/position if previously approved by the Commandant.

7. Staffing Calculation Example.

- a. The Commandant has approved a pumper and full time manning of the pumper for Coast Guard Example Support Center. Determine the staffing requirements.
- b. Go to the structural table since a pumper is intended to fight structural fires. The table lists 4 as the crew size. The crew will work a 72 hour week. The position/billet multiplier is 2.7.

4.K.7.b. (Cont'd) Multiplying  $4 \times 2.7 = 10.8$  or 11 positions/billets required to man the pumper. Add one billet/position for fire chief, for a total of 12 positions/billets.

#### Structural Table

<u>Vehicle Designation</u>	<u>Crew Size</u>
750-1,000 Gallon Pumper	4
Aerial Ladder	4
Aerial Ladder and 750-1,000 Gallon Pumper	8

#### Crash-Fire-Rescue Table

<u>Vehicle Designation</u>	<u>Crew Size</u>
Twinned Agent Unit (TAU) or Crash Truck (PIO)	2
TAU & TAU or Crash Truck (P10)	4
Crash Truck (P4)	3
Crash Truck (MB5)	4
TAU & P4	5
P4 & P4	6
P4 & MB5	7
TAU & MB5	6
MB5 & MB5	8

#### Sample Fire Fighter Work Schedule

		M	T	W	TH	F	S	SU	Hours Worked
Week	1	D	0	D	0	D	0	D	96
Week	2	0	D	0	D	0	0	0	48
									144
									-2
									72 hours/week

D = 24 hour duty day  
0 = off duty

Figure 4-10

SECTION L  
MEDICAL FACILITIES  
(To be developed)

#### 4.M. Logistics Activities,

1. Definition. Storekeepers budget and account for, purchase/requisition, receive, inspect, issue, stow and preserve, package, ship, dispose of, reutilize, and perform inventory control for all property, equipage, supplies and materials belonging to the Coast Guard (including, but not limited to Navy NON-AV DIR equipment); maintain all allowance documentation (e.g. CALMS, ERPAL), and prepare configuration change reports and allowance change requests; prepare public vouchers, transportation requests and shipping documents; perform traffic management/transportation functions including shipments, inspections, reservations, service orders and claims relating to Government and Personnel Personal Property; prepare returns covering the receipts and expenditures of public monies; operate office labor saving devices and automated data processing equipment; and prepare and maintain required forms, records, publications, correspondence, reports, and files.
2. Planning Factors.
  - a. The minimum size of a unit which would rate a Storekeeper billet is dependent upon a variety of factors such as: unit mission, geographic location, availability of support from other units or command echelons and presence of other ratings capable of assuming minimum supply duties. In general, a unit of 25 or more personnel having general supply functions and not directly supported by a group, base or support center would rate a Storekeeper. On the other hand, a unit of 25 or more personnel having no significant specialized supply functions and which is directly supported by a group, base or support center would not rate a Storekeeper. Despite these generalities, the needs of each unit must be evaluated on an individual basis.
3. Storekeeper vs. Yeoman Support Billet. Both Storekeepers and Yeoman are considered to be administrative ratings. In some instances, the choice of either SK or YN for a support billet may seem insignificant. However, the choice is not trivial. Each rating possesses expertise in specific areas and the choice of which rating would provide the most effective support to a unit, while best utilizing the training and expertise of the particular rating, will depend upon the nature of the support required. The determining factor is the qualifications for each rating as set forth in the Enlisted Qualifications Manual (COMDINST M1414.8

4.M.3. (Cont'd) (series)). Generally, if the unit workload emphasis is primarily on administrative/personnel duties, YN is the appropriate rating. However, if the majority of tasks to be performed will involve supply and/or logistics support matters, the SK rating would be the appropriate choice.

#### 4.N. Installation Security.

1. Introduction. At most Coast Guard shore installations, nominal security needs are met by duty section personnel. These personnel may be assigned other duties, such as SAR ready boat crews, or may be drawn from assigned day workers to serve as security watch on a rotational basis. Because of unique personnel or unit resource conditions some units require a dedicated security force to insure the protection of Coast Guard installations, facilities, materials, equipment, personnel and documents against fire, theft, espionage, accidents, mischief or any unlawful act. This includes investigation for claims of theft of and damage to government/private property within the perimeter barrier, or designated boundary, maintenance of a guard force to provide the enforcement medium needed to carry out the security mission, and preparation, issuance, and validation of personnel identification such as temporary and permanent passes, badges, ID cards, and automobile decals. The need for this dedicated security force will be determined on an individual case-by-case basis. It must be recognized that dedicated security forces are expensive, in terms of manpower and/or monetary resources. The necessity for such forces must be carefully analyzed on an individual case-by-case basis for each unit. Once a valid need for dedicated resources has been identified contract electronic security systems, contract security personnel, and in-house personnel will be considered as alternatives. The following standards will be utilized in determining CG in-house security staffing. Specific instruction can be found in the Coast Guard Security Manual (COMDTINST M5500.11(series)) and the Physical Security Manual (COMDTINST M5530.1).

2. Definitions.

- a. Security Office - the central point of guard operations. Alarm monitors may be located at this point if intrusion alarms are installed but integrative security alarm watch requirement along with other watch requirements must be considered. Issuance of automobile decals and other identification services may be accomplished at this point, if desired and applicable.
- b. Command Security Officer - a commissioned, warrant, or petty officer (or equivalent civilian) responsible for developing security plans and recommending instructions, guard orders etc., to implement the plans for the overall security of the unit. Conducts investigations of minor criminal offenses.

4.N.2.c. Guard Supervisor - a petty officer (or equivalent civilian) responsible for the coordination and supervision of guard operations on an installation-wide basis. He will stand an occasional watch as required due to absences of watch supervisor or guard personnel.

d. Senior Watchstander - the senior guard responsible for the proper execution of duties in a particular watch section. He insures all watch posts are properly manned. He monitors and supervises the watchstanders in the absence of the Guard Supervisor. He will also stand a regular watch position.

e. Roving Vehicle Patrol - a mobile unit staffed by one individual with a communications link to the security office or central base of operations.

f. Roving Foot Patrol - a unit of limited mobility staffed by one individual with a communications link to the security office or central base of operations.

g. Fixed Post - a 1-2 billet station the number of which is determined by physical security requirements, access gates, or security office requirements.

3. Standards. Installation Security Staffing as developed in this chapter serves as a guide for basic staffing levels. Security needs are determined by evaluating each unit according to unique physical requirements such as exchange, clubs, equipment, material inventories, or munitions. These evaluations must be specifically identified when either requesting allowance changes or developing staffing levels for new units.

4. Staffing Calculation Sequence. Installation security is calculated in three sequential steps based on varying supporting criteria as detailed below:

a. Command Security Officer - number of security personnel assigned.

b. Supervision/Guards - number of fixed and/or mobile posts.

c. Pass and ID Clerk - Passes/ID's issued weekly.



- 4.N.5. Command Security Officer Standards. The standards provide for the assignment of Commissioned, Warrant Officers and PO's (or equivalent civilian). The total number of security personnel assigned determines the grade level of the security officer authorized.

SECURITY OFFICER STANDARDS

	<u>Security Officer</u>	<u>Assistant Security Officer</u>
Over 50 security personnel assigned	- LTJG/CWO	E-8/9
Over 20 security personnel assigned	- E-8/9	
Under 20 security personnel assigned	- collateral duty of assigned personnel	

Figure 4-11

6. Supervision/Guard Standards. A guard supervisor (E-6/7) will be assigned only when a requirement exists for two or more 24-hour, 7 days/week posts or when more than 13 security billets are authorized. Figures 4-13 through 4-16 contain recommended staffing levels for the Guard Supervisors (E-6/7), senior watchstander (E-4/5) and guards (E-3). In order to determine Staffing Standards, use the minimum number of fixed and mobile posts as approved by the Commandant as workload indicators.
- a. An asterisk designates situations where necessary supervision/coordination can be adequately covered by OOD/JOOD personnel during non-duty hours. During duty hours ample supervision can be supplied by the security officer or senior watch supervisors.
  - b. When recommended staffing levels are inadequate to sufficiently cover the minimum number of fixed and mobile posts on the installation, available duty section personnel must be utilized to augment the security force.
7. Pass and ID Clerk Standards. Figure 4-40 provides recommended staffing levels when a requirement exists for issuance of passes and identification services in the security office.

4.N.8. Staffing Example. The workload indicator which determines the recommended staffing levels for guards and their supervisors is the number fixed and mobile posts required for adequate physical security. This staffing level, in turn, gives the grade level of the security officer. For example, if a physical security survey approved by the Commandant has determined that an installation requires 24-hour main gate coverage, 7 days/week; a 24 hour roving vehicular patrol, 7 days/week; and a 8 hour fixed post 7 days/week by using figures 4-13 and 4-16 the following standards apply.

a. Supervisor/Guard Standards -

1 E-6/7 (or civilian  
equivalent)

Guard Supervisor

2 E-4/5 (or civilian  
equivalent)

Watch Supervisor

8 E-3 (or civilian  
equivalent)

Guards

11 Total Guard personnel

b. Command Security Officer Standards - the preceding criteria justifies no security officer and therefore it must be a collateral duty of other assigned personnel.

Function: Pass ID Clerk

Workload Indicator: Number of passes/ID's issued per week.

BILLET POSITION/ TITLE	QUALITATIVE REQUIREMENTS				QUANTITATIVE PERSONNEL REQUIREMENTS			
	OFFICER		ENLISTED		CIVILIAN		INCREMENTS OF WORKLOAD INDICATOR	
	OBC	GRADE	RATE		SCHD	SERIES	1-50*	201-over
Pass + ID Clerk			E-6/7				0	2
							1	
							0	

Figure 4-12

Function: Supervisor/Guards

Workload Indicator: The number of posts manned for 16 hours 5 days/week and for 24 hours 2 days/week

BILLET POSITION/ TITLE	QUALITATIVE REQUIREMENTS			QUANTITATIVE PERSONNEL REQUIREMENTS									
	OFFICER	ENLISTED	CIVILIAN	INCREMENTS OF WORKLOAD INDICATOR									
				1	2	3	4	5	6	7	8	9	10
Guard Supervisor				0	0	0	1	1	1	1	2	2	2
Senior Watchstander		E-6/7		*	1	2	3	4	5	6	7	7	8
Guard		E-4/5											
Total		E-3		4	6	8	10	12	14	16	18	21	23
Guard Supervisor				4	7	10	14	17	20	23	27	30	33
Senior Watchstander				0	0	0	0	1	1	1	2	2	2
Guard				*	1	2	3	4	5	6	7	8	9
Total				4	7	9	12	14	16	19	21	24	27
				4	8	11	15	19	22	26	30	34	38

\*OOD/JOOD supervises during non duty hours

Figure 4-13

Function: Guard Supervisor/Guards

Workload Indicator: 8 hour/posts; 7 days/week

BILLET POSITION/ TITLE	QUALITATIVE REQUIREMENTS			QUANTITATIVE PERSONNEL REQUIREMENTS														
	OFFICER		ENLISTED	CIVILIAN		INCREMENTS OF WORKLOAD INDICATOR												
	OBC	GRADE	RATE	SCHD	SERIES	1	2	3	4	5	6	7	8	9	10			
Guard Supervisor			E-6/7			0	0	0	0	0	0	0	0	0	0			
Senior Watchstander			E-4/5			*	1	1	1	1	1	1	1	1	1			
Guard			E-3			2	2	2	2	2	2	2	2	2	2			
Total						2	3	5	7	9	10	12	13	14	15			
Guard Supervisor				GS	085	0	0	0	0	0	0	0	0	0	0			
Senior Watchstander				GS	085	*	1	1	1	1	1	2	2	2	2			
Guard				GS	085	2	2	4	6	8	9	10	11	12	13			
Total						2	3	5	7	9	10	12	13	14	15			

\*OOD/JOOD supervises during non duty hours

Figure 4-14

Function: Guard Supervisor/Guards

Workload Indicator: 16 hour/posts; 7 days/week

BILLET POSITION/ TITLE	QUALITATIVE REQUIREMENTS				QUANTITATIVE PERSONNEL REQUIREMENTS												
	OFFICER		ENLISTED	CIVILIAN		INCREMENTS OF WORKLOAD INDICATOR											
	OBC	GRADE	RATE	SCHD	SERIES	1	2	3	4	5	6	7	8	9	10		
						0	0	0	0	1	1	1	2	2	2		
Guard Supervisor			E-6/7			1	1	2	3	3	4	4	5	5	6		
Senior Watchstander			E-4/5			3	5	7	9	11	13	16	18	21	24		
Guard			E-3			4	6	9	12	15	18	21	25	28	32		
Total						0	0	0	0	1	1	1	2	2	2		
Guard Supervisor				GS	085	1	1	2	3	3	4	4	5	6	6		
Senior Watchstander				GS	085	3	6	8	10	13	15	18	20	22	25		
Guard				GS	085	4	7	10	13	17	20	23	27	30	33		
Total																	

Figure 4-15

Function: Guard Supervisor/Guards

Work Indicator: Number of continuously manned posts/patrols (24 hr/day, 7 days/week)

BILLET POSITION/ TITLE	QUALITATIVE REQUIREMENTS				QUANTITATIVE PERSONNEL REQUIREMENTS												
	OFFICER		ENLISTED	CIVILIAN		INCREMENTS OF WORKLOAD INDICATOR											
	OBC	GRADE	RATE	SCHD	SERIES	1	2	3	4	5	6	7	8	9	10		
						*	1	1	1	1	1	1	2	2	2		
Guard Supervisor			E-6/7			1	2	3	3	4	4	6	6	7	7		
Senior Watchstander			E-4/5			4	6	10	14	18	22	24	28	32	36		
Guard			E-3			5	9	14	18	23	27	32	36	41	45		
Total						1	1	2	2	2	2	2	3	3	3		
Guard Supervisor				GS	085	*	2	4	5	6	7	8	8	9	10		
Senior Watchstander				GS	085	4	7	9	13	17	21	25	29	33	37		
Guard				GS	085	5	10	15	20	25	30	35	40	45	50		
Total																	

\*OOD/JOOD supervises during non-duty hours.

Figure 4-16

**SECTION O**  
**INFORMATION RESOURCES MANAGEMENT (IRM)**  
**(To be developed)**



## CHAPTER 5 -- Staffing Standards for Headquarters Units

1. Introduction. This chapter contains staffing standards for Headquarters Units.
2. Definition. Headquarters units provide support services for the Coast Guard as a whole and are under immediate direction of the Commandant, assisted by Headquarters Staff.

1. The first part of the document is a letter from the

author to the editor of the journal, in which he

states that he has received a letter from the editor of the journal, in which he



**SECTION A**  
**TRAINING CENTERS**  
**(To be developed)**

SECTION B

RECRUITING CENTERS

(To be developed)

SECTION C  
SHIP TRAINING DETACHMENTS  
(To be developed)

**SECTION D**

**RESERVE STATIONKEEPERS**

(To be developed)



